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ITEMS OF INTEREST.

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Notes from the Profession.

Women in the Dental Profession.

DR. JENNIE HILTON.

I BEING a woman dentist, wish to enter my protest against the unjust, unkind and untrue statements put forth by W. R. Spener, in December ITEMS, in regard to women in the dental profession. Had all dentists held such antedeluvian ideas, women would never have been admitted to the ranks. But, thank heaven, there is a whole host of large-minded, big-souled men, who have opened the way for us, and have said, "Come up higher, the profession is not ours by any divine right, but yours as well, if you are able to fulfil its requirements." This has been said to us by such grand men as Dr. T. W. Brophy, of Chicago, a dentist who is one of the leading men of his times; by Dr. J. Taft, that grand old man, Dean of Ann Arbor Dental College, whom the students all so venerate and love; by Dr. Watling, Professor of Operative Dentistry, also of Ann Arbor, who gives every student, man or women, the hearty right hand of fellowship. There is a whole host of others, among which I wish to note the names of those who have so gallantly come to our rescue, in the two last numbers of ITEMS. When all these are for us, what care we who are against us? After reading all their complimentary words, Mr. Spener will feel like saying, "Lord deliver me from professional *men* also." Woman dentists have not relinquished their hope of home. Oh, no; that is not at all necessary; for any woman who has the ability and energy to be a dentist is able, by these same qualities, to see well to the ways of her household. Some of the best-kept homes I was ever in have been those of professional women; for who, better than they who understand the laws of chemistry and can apply them to cooking, the laws of hygiene, and apply them to cleanliness, ventilation, etc., can have more comfortable homes; and the same artistic genius that enables a woman to contour a tooth with gold or construct a set of artificial teeth, enables her to arrange in an artistic manner the paraphernalia of her household. It is not necessary that a woman do all the drudgery and details of home making.

Neither have we women dentists given up hope of heaven. On the contrary, it grows stronger and brighter each year, when we remember the many poor, nervous, invalid women whom we have soothed and relieved; and the many little suffering ones whom we have met at the office door and taken in our arms, and by kind words and sympathy induced to let us quiet an aching tooth; and when we think of the many times the parents have said, "God bless you," and sometimes added, "Oh, I am so glad I ever came to a woman whose ready tact, loving sympathy and gentle touch has so quickly quieted my nervous child and eased its pain,"—when I remember all these kindly offices which we women dentists are being constantly called to perform, I think we are truly blest. We are reminded of what He has said, "Inasmuch as ye have done it unto the least of these, ye have done it unto me." Unless each one of us is exercising our higher and nobler faculties, we are not using the talents which we are commanded not to hide.

It will be a good thing for the world when women give up the idea of leaning on some one. Let us be the independent, self-sustaining, womanly women God

intended us to be. The old idea that women must lean and twine and vine on and around some man, who may prove altogether unworthy of her, and wholly incapable of supporting her, is terribly revolting to me. I have a better opinion of most men than to think that a woman's high intellectual attainments and professional skill, which enable her to make an honest living outside the old beaten paths, will make her appear less lovely or lovable. The estimate of every noble man must be enhanced to find us skilful, useful and self-supporting. Few men want mere dolls, tho they may be pretty. Lots of people can be "just perfectly lovely" that can't be anything else.

The idea that because a woman tries to think and act and earn for herself—that this shows she despises to be a help meet for man! I would like to inquire, what woman is most helpful to her husband: she who does the details and drudgery of house work that represents three dollars a week or she who, working side by side with him in the office, earns ten times that amount? And in which case (in the eyes of a sensible man) would she be the greater "*joy to the household?*"

As being man haters, I deny the accusation. Men have been our best friends, because, being in higher places, they have the best opportunity to befriend us. Had it not been for their sympathy, help and encouragement, we could never have reached the heights which we have now attained. Step by step they have paved the way for us through the forests dense with ignorance, superstition and prejudice against woman. The better class of men have realized for many years that there could be no real progress in the world, no great advance in civilization if one-half of mankind were to be kept in a subordinate state. Why, then, should we hate *our fellows* of the masculine sex? We do not; we honor, respect and revere them. And what shall we say of woman haters? Haters of women, unless they, forsooth, are pretty dolls, or, at best, such neutral, negative, pliant creatures, as to want only to sit at *his* feet, to gratify and obey him as her lord and master? We only occasionally hear from such a one. Do we now? Let us cover him with a mantle of charity; a *very small one* will suffice. We will extend to him our heartfelt sympathy in his distress; and if his effort to belittle woman should prove his death, our earnest prayer shall be that when he is "filling his last cavity," it may be written on his tombstone, "Here lies the last obstructionist to woman dentists."

Sad Death of Dr. Stiles of Mt. Ayr, Ia. The Work of a Drunken Fellow, and a Blundering Doctor.

MT. AYR, Iowa, February 11th, 1890.

DR. J. F. FRANTZ:

Dear Sir:—Your letter of February 3d to hand; the case, as follows: On the evening of November 28th, 1889, Mr. Vint Reed entered our house and, after eating supper, we noticed he was intoxicated. On leaving the dining-room, he went up stairs to the dentist's office, and there being a bed in the room, he went to bed, and left the lamp burning. He knocked the lamp over, and fell from the bed to the floor. We heard the noise and running up stairs we saw the house was afire. Miss Etta Ellis was the first to give the alarm. When Dr. Stiles heard of it, he immediately rushed into the room and began to fight the fire. The news spread and the fire was soon extinguished. In the meantime, Dr. Stiles had severely burned his hand while carrying out a burning mattress. A doctor came, and, being excited, sprinkled morphine on the raw and bleeding hand to alleviate the pain. The morphine soon circulated through his blood and he became stupid. It was almost impossible to arouse him. He continued in this state four hours, when the people were startled by hearing another fire alarm. Six buildings were destroyed, the loss amounting to \$35,000. The people rushed to the fire, leaving no one but a boy and Ettie Ellis, and myself, with Dr. Stiles. We worked with him till 12 o'clock, when some one came in, from Dr. Bailey saying, "let him sleep." We did so, as he seemed to be breathing naturally. About 1 o'clock, Dr. Bailey came, and said

"something must be done." He then tried to arouse him, but could not. Other doctors were called in. They continued to work with him, trying every way to arouse him, but it was impossible. At 4 o'clock the following morning he died. On waking him once, I asked him if he did not know that if he did not wake up and try to walk he would die. He replied, "yes," but he was too stupid to say more. He was born December 8th, 1834. He came to Mt. Ayr in August, 1884, and began the practice of dentistry, and for the past four years he was the proprietor of a hotel known as the Stiles' House. It was here that the second fire occurred and it was burned. He has been in the dentist business for more than twenty years, and was called a good dentist. He took great delight in reading the *ITEMS*, and would often sit and read to us from them, and relate some incident that happened during his practice. He was the only dentist in the town, and had a large practice. There are several sets of teeth which he had set up the day previous to his death, which remain unfinished.

This would be a good location for some good dentist. It was a sudden blow to us, and a sad Thanksgiving to ourselves and community. He was well and talking with us at supper, and before the next day dawned he was gone. It is hard to bear.

Mt. Ayr, Iowa.

MRS. E. STILES.

Florida for Dentists.

THE following private letter gives us a glimpse of Florida for a dentist.—ED. *ITEMS*.

MANATEE, Florida, Feb. 24th, 1890.

DEAR DR. WELCH :—You ask me how do I get along in Florida? Well, I *think* it the only place (unless there is another like it) where I could have lived at all the past five years. I can not keep up circulation of the blood to a healthful degree in a temperature of less than about 60°. Hence any other locality would be constant torment, or lead to serious sickness.

This extreme southern part of the State has only some four or five towns large enough for a dentist to live on the practice that comes to one office. Hence, nearly all of us (dentists) have two or more branch offices or points to visit. In that way I get all I can do. I have had some nine acres of fruit land cleared, and set in a great variety of trees and plants, and eventually my home will be worth a visit to one who admires such things. So far, pineapples, bananas, figs, Japan persimmons and peaches are about the extent of my own productions, except winter garden. But later I will have a variety of oranges, lemons, grapes, dates, Japan plums, limes, grape fruit, Avocado pears, mangoes, sugar apples, tropical papaws, etc. The latter I find a great remedy for indigestion, but have seen no one else who had made the same discovery.

Our educational privileges are too much on the careless, easy-going Southern style. I believe, however, I have my son (sixteen years old) in a good school, the State Military Institute at Gainesville, this State. We have great religious revivals in Florida, especially among the M. E. church people; but most every man out of the church takes a "social drink." Still, few ever get intoxicated as at the North. There is more time given to social matters—hence people are better fitted for such things here than generally at the North. But it is a very long subject, and I may not be interesting you.

Ever truly, etc.,

W. E. DRISCOLL.

Prevention of Death from Chloroform.—In France, when a patient is under chloroform, on the slightest symptom appearing of failure of the heart, they turn him nearly upside down—that is, with his head downward and his heels in the air. This, they say, always restores him; and such is their faith in the efficacy of this method that the operating tables in the Paris hospitals are made so that in an instant they can be elevated with one end in the air, so as to bring the patient into a position resembling that of standing on his head.—*Pac. Med. Record*.

The Etiology of Dental Decay.

DR. GEO. S. ALLEN,

Before the Pa. Odontological Society.

PRACTICALLY, all agree on two points: 1st. That dental caries invariably commences on the outside of the tooth; and, 2d, that some acid begins the work of tooth destruction. So much only is common ground. The radical differences lie (1.) in accounting for the presence of the acid in the oval cavity, and (2.) in estimating the resistive power of the tooth itself, whether it be dead or alive. The real bone of contention is, whence comes the acid and why does it make cavities in tooth structure instead of uniformly eating it away on all surfaces?*

I premise by saying that the germ theory is the only theory ever presented to the profession that is grounded on a demonstration from beginning to end, and from which every possible source of error has been eliminated by the most careful and painstaking series of experiments. It accounts for nearly every phase of caries; shows whence comes the acid that first dissolves the lime salts of the teeth; clearly explains how the animal basis substance is afterward destroyed and shows how, per force, cavities or pockets are formed in the teeth.

The actual presence of an acid as a commencement or initiative step in the process of decay being acknowledged, Miller shows us whence it comes, names it and points out the little organism at work manufacturing it. All other investigations have depended on guess-work mostly to account for it. In brief, it is lactic acid that does the work, and it is one of the waste products of bacterial life in the presence of a fermentable substance.† It is one of the so-called ptomaines. Only a few bacteria eliminate this acid in growing; but let it be produced and brought into contact with the lime salts of the tooth, chemical action at once takes place. The lactic acid supplanting the phosphoric and carbonic acids of the tooth and forming soluble salts. Fresh supplies of food for the bacteria are constantly obtained from the sugars or amylaceous matters in the mouth, and so each little crack or break in a tooth, or other spot difficult of access, and hard to keep clean, becomes a focus of destructive activity; a little acid manufactory. Were it not for the constant absorption of the acid by the lime salts of the tooth forming lactate of lime, bacterial life in a cavity would soon cease. They would be smothered in their own waste products and die, as naturally as we would die were we compelled to remain in a close room in the presence of the waste products of our life, viz., the carbonic acid from the lungs, the urine from the kidneys and the feces from the bowels; but the lime salts act the part of scavengers for the bacteria and keeps their garden in good condition. The acid first formed commences the cavity, and as solution of the lime salts take place the bacteria follow after, penetrating and enlarging the dentinal tubuli.‡

In advance of the bacteria, there is always to be found a zone of semi-decalcified dentine. Exactly what the ptomaine is that completes the work of tooth destruction, breaks down the animal basis substances, is yet to be determined; but it is also a waste product of bacterial life. Up to the date of the publication of Dr. Miller's researches and experiments, the constant presence of micro-organisms in the carious dentine was generally recognized and some writers had even more than suspected that they played an important part in tooth destruction; but it was the good fortune of Dr. Miller to be able to demonstrate the correctness of the suspicion and to remove all doubts by showing how they did their work and from whence they derived their power.

So far, the labors of Dr. Miller might be called analytic; but he went further and synthetically silenced opposition. He took a freshly extracted, healthy, bi-cus-

* And why its action on a live tooth, which is supposed to be able more favorably to resist disintegration, should be more rapid and more extensive than on a dead tooth?—ED. ITEMS.

† Is not also nascent nitric acid often a very destructive agent?—ED. ITEMS.

‡ Then why should not the teeth decay still more rapidly when fermentation and worms swarm all over the body after death? But here the teeth are the last to succumb. They last very much longer in death than in life, for years and years longer than any other tissue of the body.—ED. ITEMS.

pid tooth and sterilized it completely by heat, employing about 300° or 320° Far. All germs, or spores of germs, were thus destroyed. The tooth thus treated was cut into small pieces—some very thin—placed in a tube containing a pure cultus of the bacteria, constantly found in decaying teeth, in the presence of a non-fermentable fluid, and some in the same fluid to which a fermentable substance had been added—beef extract being the former, and beef extract plus two per cent of cane sugar, the latter. Both tubes were then placed in a suitable warm chamber and the effects noticed. In the first, tho the bacteria flourished, no change was observed in the portions of tooth. There being no fermentation, no acid was found; in the latter, however, a pronounced action was apparent in a few days, and the pieces, on being removed from the fluid, were soft and pliable and could be cut with a knife or razor. Two or three weeks' maceration showed that disintegration and destruction of the substance of the tooth was rapidly going on. Thus far in all respects, so far at least as the first stages were concerned, the action was similar to that observed in using a weak solution of chromic acid—the acid commonly employed in the laboratory for softening teeth, preparatory to section cutting. The sound, healthy pieces of teeth thus decalcified were transferred to an ordinary freezing microtome and sliced, stained in the usual way and mounted in balsam, and then placed under the microscope for examination. The preparations thus obtained resembled those made from natural caries. In fact, so close was the resemblance, that the most expert microscopist could not tell the one from the other. In all essentials they were counterparts. In both are to be found the germs in the distended tubules. In each there is the same breaking down of the matrix and the formation of pockets or caverns by the fusing together of the tubules and bacilli. In each there is to be found, in advance of the germs, the zone of semi-decalcified dentine. To this last fact I would draw special attention, it being of vital importance in comparing the two. Thus a complete demonstration of the bacterial origin of caries was established. A preparation in my possession might be called the caries puzzle. It contains three slices of carious dentine. One, natural, from a living tooth, one from a dead tooth, and the third, artificial caries. All have the same characteristics and it is impossible to tell them apart.

In artificially produced caries there is no possible explanation of the result brought about other than that it is due to lactic acid generated by the growth of the bacteria in the fermentable mixture into which the portions of sound teeth had been placed.

Crown and Bridge-work and Conservative Dentistry.

CHAS. J. ESSIG, M.D., D.D.S.

AS the time seems to have arrived when the different plans of setting artificial teeth (properly coming under the head of bridge-work) have assumed a fixed and distinct place in prosthetic dentistry, it will be well for those who, attracted by its apparent advantages, are ready to accord it preference to the ordinary removable denture, to give the most thorough consideration to the fitness of each in meeting the requirements of particular cases. To decide such questions correctly is not always easy, and a careful operator will only make his decision after a thorough examination of the case in hand. He will examine the natural teeth to which his bridge-work must be anchored; he will note whether these are devitalized for this should have much to do in influencing him in the adoption of a plan.

He will next investigate the relative merits of the different methods of bridge-work and the ordinary denture; he will make a sort of mental analysis of each, as to their general influence on the comfort of the patient, their comparative cleanliness, and, above all, the question of possible injury to the remaining natural teeth; he will not attempt to decide till, after making a thorough examination of the mouth, he has obtained the accurate impression, which he can study with reference to all the points involved.

In the present status of bridge-work there seems to be a greater desire to originate than to conserve, and some of the methods described in the journals are not only impracticable, but quite ruinous to the sound, natural teeth to which the fixtures are often attached. Take, for example, the method, "Pin and Plate Bridge," described in the *Dental Cosmos* for March, 1886, wherein the writer describes "a typical case," in which a lateral incisor (crown and root) has been lost, the cuspid and front incisor, fully vitalized, and without proximal carious cavities, remaining in position. To meet this loss he prepares a porcelain lateral tooth, to the backings of which are two pure gold wings, swaged to fit the palato-approximal surfaces of the cuspid and incisor, and attaches this appliances to the cuspid and central incisor by platinum rivets, attached to the wings or palato-approximal base plates, and fitting into small cylindrical openings drilled into these previously sound teeth, and fastened there by means of oxyphosphate of zinc.

Strength and impermeability are indispensable requirements in any method. Whether pure gold plate of No. 26 and oxyphosphate cement fastenings offer a reasonable promise of withstanding the great and constant force exerted on such a fixture may, I think, easily be determined without a trial. On the strength of the fixture depends its immobility and consequently its permanence. If the bridge is not absolutely immovable, it will not be impermeable, and, in the absence of that characteristic, destruction of teeth to which the pins are fastened must soon follow. Such examples of so-called bridge-work look well on paper, but let us make a careful comparison of the "typical case" above mentioned and the ordinary method of replacing the lost tooth by the removable partial gold plate, which it is intended to supersede.

What are the great objections to the usual form of artificial dentures?

1. The presence of a plate covering the roof of the mouth.
2. Instability, which depends, much on the skill displayed in its construction.
3. Attaching the partial denture to the natural teeth.

Let us admit that clasps are injurious to the natural teeth; but is the kind of bridge-work described above less so? Is it not reasonable to assume that the friction due to the slight motion of the removable plate, together with the facility with which it can be removed and thoroughly cleaned, will, in a measure, protect the natural teeth to a greater extent than where the clasp or fastening is not removable, but just as permeable? Of course, the answer to this question must depend on the stability of the bridge, but we have no right to experiment on the natural organs of our patients when such experiments may involve their loss; nor do I deem such uncertain work necessary in the hands of experienced dentists. All attempts to anchor bridge-work to vital teeth are objectionable, and not usually attended with good results.

In the article to which I have alluded is also described a case of bridge-work for the replacement of two molars and one bicuspid, by fastening to the first bicuspid and the third molar, by means of crown plates or caps swaged of gold. It will be noticed, particularly in the case of the first bicuspid, that "the crown plate" or partial cap is so constructed that every part of the tooth is covered except its buccal surface, thus offering an extensive margin for the ingress of fluids. That such a fixture, depending on the very superficial anchorage afforded by openings made in vital teeth, can be exposed to the tremendous force exerted in masticating without loosening and displacement, seems hardly possible, and that the partial cap described there as a means of embracing the first bicuspid will remain close enough to exclude moisture I do not for a moment believe.

The employment of such means of attachment to vital teeth I deem most censurable. I do not wish to be understood as expressing disapprobation of all kinds of bridge-work, but I do condemn all procedures of the kind where the operator drills into or mutilates vital teeth for the purpose of forming anchorages; because that is not conservative dentistry.

The application of bridge-work to pulpless teeth certainly offers more encouraging prospects of permanence, and is in every way less objectionable.

The abuse of the method, when fastening to devitalized teeth, will be likely to consist in the hopeless attempt to make three or four roots sustain the masticating force of an entire upper or lower denture of fourteen teeth; but even in such badly directed application of the bridge method, the harm will be most likely to fall on the patient's purse, and not on valuable teeth. Still, there are many instances in which the immobile fixture will be found to be in every respect superior to the removable plate; but the prospective permanence of the fixture is the feature which should decide the question. When we carefully consider the relative permanence of the different methods of attaching artificial teeth, we find ourselves restricted to very narrow limits.

The same writer, from whom I have quoted, makes the statement that "experience has fully demonstrated that a slight mutilation of a vital tooth is far less destructive in its ultimate results than is the wearing of partial plates."

I have met with no such conclusive evidence in favor of mutilation, nor do I believe that the method has been sufficiently tested by time and the forces to which its function must subject it to warrant the belief that it should supersede in all cases the removable artificial denture. Tho this method of attaching artificial teeth has not till quite recently been employed, it is claimed that immobility and permanence have been amply secured.

I have noticed that the apprehension of the idea of permanence in connection with this subject differs widely in different minds; but it is not unreasonable to expect the durability of bridge-work to be at least equal, if not superior, to the old and tried method which it is designed to supersede. I have seen many partial dentures which had been worn with comfort and safety to the remaining vital teeth for periods varying from fifteen to thirty years. How many examples of such bridge-work in connection with mutilated vital teeth will last that long?

In the description of "The Pin and Plate Bridge" from which I have quoted it is admitted, even this early in the history of the method, that a very few cases have become loosened, the bridge being for some weeks still worn in the loosened condition, and that under such circumstances the cement will, of course, become detached and wash out, admitting food and secretions.

It is hard to conceive of a worse result, and in the majority of such cases rapid decalcification of the enamel under the loosened plate would be sure to follow.

A young professional friend recently described to me a case in which a very nicely adjusted gold cap, covering the palatal surfaces and cutting edges of the four central incisors for the purpose of retaining them in position, resulted in three weeks in serious decalcification of the enamel.

Placing systematically the different methods of attaching bridge-work to the natural organs with reference to their probable permanence and capacity for usefulness, that plan in which the anchorage consists exclusively in the cap or ferrule, in connection with the pin or dowel, adjusted to devitalized roots, will be regarded as ranking highest in all the qualities which care and judgment should demand for such a fixture.

It is the so-called Richmond crown, either singly or in numbers united, so as to constitute a bridge, and where each tooth is fastened to a sound root. The superiority of this method over all others does not consist alone in the impermeability which is afforded by the cap or ferrule, but in the fact that it also removes strains from the long axis of the tooth to the alveolar socket, where it properly belongs; and this prevents the very common occurrence of fracture of the roots.

Conservative dentistry has made no more important advancement than this in the last ten years. It enables the dentist of to-day to save and utilize roots of dead teeth that but a short period before were moved by thousands.

But even this form of immobile denture is open to one serious objection—

namely, the difficulty of replacing a broken tooth. No reliable method of replacing teeth, which are liable to give way in time, has yet been devised.

An attempt to utilize the screw and nut in bridge-work cannot fail to be regarded as retrogressive.

To meet this objection, movable fixtures have been recommended. One of these is described in the "Hints and Queries" of the *Dental Cosmos* for September, 1886; but as the security of the fixture depends on attachments to the natural teeth by means of several gold screws, it is in no respect an improvement over the ordinary artificial denture, and its employment would be much more destructive to the vital organs to which it is proposed to attach it.

The abuse of the immobile fixture, already alluded to, wherein two roots are frequently made to sustain the masticating force of six or more teeth, has done much toward bringing bridge-work into disrepute. That such unequal distribution of force can afford a reasonable promise of permanence is not probable, unless the wearer of the fixture is fully informed of its deficiency, and exercises unremitting care; but under those conditions it could not be claimed that such a specimen of bridge-work was fully useful.

Something should also be said about the materials employed in fastening crowns either singly or in numbers united.

There are four materials employed for this purpose. They are oxyphosphate of zinc, oxychloride of zinc, amalgam and gutta-percha.

The first seems to possess about all that is required of such an agent. It may be used successfully in fastening crowns to defective roots, where the oxychloride would afford nothing but failure. I refer to those cases where, either by the careless use of the drill in enlarging the canals for the reception of the pin or by decay, the side of the root is perforated. The oxychloride in such cases will be found to be so irritating to the tissues that violent inflammation will soon follow the introduction of the crown—indeed, the escharotic properties of the chloride of zinc, even in sound roots, may cause sloughing of the margins of the gum to an extent sufficient to impair the operation. In addition to this, there is scarcely a question that the phosphate is less soluble than the chloride cements. Amalgam and gutta-percha are both inferior to oxyphosphate of zinc for crown and bridge fastening, because they cannot be used with facility with the cap or ferrule; and I have noticed in many instances, where amalgam has been employed as a fastening for crowns, an unusual amount of irritation of the free margin of the gum. In many such examples this is likely to be due to imperfect workmanship.

It is due to Dr. Bonwill to state that he has suggested a means by which his crown can be set so as not only to obviate the objection which may exist against amalgam as a means of fastening, but also to make the Bonwill crown include some of the advantages embraced in the so-called Richmond crown. This consists in making a ring to accurately fit the end of the root and part of the crown, so that the root is strengthened and the gum protected from contact with the amalgam.

From long personal experience with the use of the ring as a means of binding together the parts of a fractured root, as well as a reinforcement to a sound root, I am able to commend it as one of the most useful devices which the dentist can employ in the class of cases under discussion.

Dr. C. S. W. Baldwin, in the *Dental Cosmos* for January, 1887, suggests a very valuable device in the form of a cap covering the end of the root, by which the Logan crown is brought very near the highest standard of crown work; but both the Bonwill and the Logan methods are deficient, in that two or more of them cannot be united to form a bridge; they must be employed as individual crowns, or pivot teeth; while in the so-called Richmond crowns the backings of two or even more may be united by soldering, so that the strength which union affords is easily attainable, and the strong cuspid root may often be made to support a weaker lateral root. Where two or more roots adjoin each other, the crowns should always be

united. My friend Bonwill will say that this only adds to the difficulties should one of the teeth of the fixture break. Of course it does. The difficulty of repairing bridge-work constitutes the greatest objection to it, while the ease with which the crown bearing his name may be replaced is by far the most valuable feature of his method. None of them are as yet perfect, but the Richmond crown comes nearer to the requirements than any other.

When a root splits under the strain against its long axis, to which it is exposed in mastication, in ordinary pivot cases, without the ring or cap, there begins at once a tendency of the fractured parts to separate, and the resulting space is filled up by a proliferation of the gum-tissue. A few years ago such cases were looked on as hopeless, and were usually superseded by the artificial denture; but now even such roots may be restored to almost perfect usefulness by the employment of an accurately adjusted ring of gold or platina, by which means the juxtaposition of the pieces is restored and securely maintained.

The crown, singly or in numbers, united to form a bridge, when properly planned and constructed with reference to strength and impermeability, and applied exclusively to devitalized roots, represents the highest achievement of conservative dentistry, and it settles the vexed question as to whether operative and mechanical dentistry should be separately taught and practiced; for, while crown and bridge-work begins where operative dentistry stops, it cannot be relegated to either branch exclusively, because it demands in its successful accomplishment the experience and skill of both.—*Odontological So. of Penna.*

Don't.

JAS. P. THOMPSON, M. D., JOHNSTOWN, PA.

“WHAT shall we do with the sixth year molars?” is a question still asked by members of the profession. One says, “Let them alone.” Another, equally prominent, advises thier removal under all circumstances.

Don't take the latter advice. Never extract the sixth year molars without very, very good reasons; and don't forget, too, that those learned men who think they can improve on old nature are seldom safe leaders.

In consequence of early decay, neglect, malformation of the jaw, crowding, or other similar causes, it is often necessary to remove the sixth year molars. But, before applying the forceps, don't, in a single instance, neglect Davy Crockett's judicious advice: “Be sure you're right.”

Don't accept the theory that a pulpless tooth is always a dead one. Pulpless teeth have often sufficient circulation through the pericementum to make them useful for a long time.

Several years ago I refilled for a gentleman the superior central incisors, that he said had been dead for twenty years; and these teeth are as solid and serviceable yet as any of the others in his mouth.

Don't take the advice of extremists on the subject of saving or destroying pulps. It is not possible to save every exposed pulp, and it is malpractice to engage in their wholesale destruction. Under favorable circumstances most healthy pulps can be saved by careful capping. Almost all of those not healthy will die in spite of the most skillful treatment.

Don't believe, however, that because a pulpless tooth may be useful for many years, it is likely to last as long as its neighbor which has a living pulp.

Don't accept the theory that revivification of the pericemental membrane of an old tooth which has been drying on the shelf for several years, takes place after it has been implanted. Special miracles are not vouchsafed to us in this nineteenth century. A leaden ball may be encysted in the soft tissues, be immovably fixed and carried with comparative comfort for many years; nevertheless there is no vital union between the metal and its living envelope. And so it is possible that, in favorable subjects, the root of an implanted tooth may be held firmly for a time by a kind of

bony ankylosis. The union, however, is mechanical, not vital, and it will, sooner or later, drop out.

Don't take any stock in those experts who say they can drill to the extremity of any root canal and fill it perfectly with gold. Those vaunted operations are among the impossibilities, as every intelligent dentist knows.

Don't believe that immediate root filling is always proper, however much the practice may be commended by enthusiasts. There are many, very many complications which positively forbid its general practice.

Let me say to the few who sit on the upper rounds of dental fame and dangle their feet over the heads of the humble craft below : Don't lay the flattering unction to your souls that you are the only good operators in this country.

And a word now to the unassuming, and to those who may lack energy. Don't sit passively at the foot and gaze with superstitious awe at those above you, while you prayerfully wish the gods had made you such scientific prodigies. In this blessed land there is no royal road to greatness in any department of life, and you should ever bear in mind that those who excel are always the hardest workers. Don't wait for something to turn up that will give you prominence, but go to work with a determination to shape circumstances to suit you. But remember the important factor to success is untiring industry. If you will read, think, experiment, investigate, be thorough, patient and pains-taking in the minor details of all your operations, and finish every one as carefully as though it were for exhibition before a board of censors, my word for it you will not be always at the foot of the ladder.

Don't work yourselves to death, and then enter the senseless plea that you could not afford the time for necessary recreation. It may be true that moments are golden, but it does not follow that they should all be used in money-getting. Dental practitioners who do not practice regular common-sense hygiene, and get away from the confinement, the cares and the labors of their profession will become physical wrecks.

Don't touch alcoholic beverages.

Don't use tobacco. Not one reasonable excuse can be presented in its favor, while scores of valid objections to its use are easily given.

Crazes are contagious, and dentists sometimes fall in with new-fangled, and perhaps unwarrantable practice without thoughtful examination. But, while it is not wise to jump at conclusions, we should avoid the other extreme. Don't condemn or pass by any new thing without an investigation ; for assuredly, science will yet bring to our aid in dental practice other means which will rival in convenience and usefulness the dam, the engine, the electric motor and mallet, and the hundreds of other helps which are now so common, but which were new.

Don't believe that every man who has authority to D. D. S. after his name is a competent practitioner of dentistry. I am acquainted with some of those fellows who publish to the world that they are graduates of one of the oldest dental colleges in America, and so on, and so on ; and I know, too, that they disgrace the profession by their quackery and malpractice as much as the general run of itinerant tooth-pullers who have never so much as seen a college. A graduate of this, one of the "oldest colleges in America," boasted to me that he had prepared and filled twenty-five cavities with amalgam in three hours, and that he did this, too, without the aid of a dental engine !

Don't believe that the college professors who graduate such incompetents are innocent parties to this unblushing fraud on the public.

When you hear a dentist boast that he has filled a marvelous number of cavities with gold in a few hours, don't take it for granted that his great feat, if truthful, was the result of superior manipulative dexterity. The fillings, you may be sure, were pitched in, so to speak, as a muscular farmer would fork a load of hay into a mow ; and it is equally certain that the bugs will crawl in around the fillings with about the same ease that the long-tailed rodents go into, around, and under the hay-pile.

A colored barber who trimmed my hair once—only once, remember—jerked me about so rudely that I thought his manipulations more suitable for the grooming of a horse than for that of a tonsorial artist.

Don't seize your patient's head with such a heavy hand as the barber did mine, and violently pull it about as though he were a horse. A gentle touch and considerate manner will go a great way toward calming the nervous and fearful, and gaining for you their confidence and respect.

Don't keep an insurance office. I am acquainted with a dentist—a graduate—who warrants his fillings for five years. Of course he will have plenty of unprofitable practice during these years if he does not repudiate his promises.

Don't fail to collect your bills promptly. The more time you give, the more unwilling many persons are to pay at all. Then there are so-called ladies and gentlemen who will most positively deny the justness of an old claim.—*Ohio Journal*.

Our Question-Box,

WITH REPLIES FROM OUR BEST AUTHORITIES ON DENTISTRY.

All questions and answers for this department should be brief.

QUESTION 1. *a.* What form of gold do you prefer for hand pressure? *b.* Is bromide of ethyl a safe anæsthetic? *c.* How administered?

a. I am using soft gold in form of pellets, slightly annealed, so that I am sure no dampness exists. I am also using felt gold very successfully, either with the pellets or by itself. I partially condense each piece with a slightly serrated instrument, then use a sharp serrated instrument to thoroughly pack before applying the next piece. Great care and some considerable practice is required. *b.* Have never used bromide of ethyl.

DR. E. A. FLOYD.

a. No. 3—using it unannealed for foundations, and for walls in the form of flattened cylinders or mats. Build on the remainder of annealed foil of either No. 5 or 4, using pellets cut from the end of a roll, either of half or whole sheets. *b.* I know nothing practically of bromide of ethyl.

WM. BARKER, D. D. S.

a. No. 5—cut and folded in ribbons—a portion in nearly all cases—then rolled into a cylinder, used more especially to introduce first in a cavity. *b.* Have had no experience with ethyl.

W. H. MORGAN.*

I am known throughout this part of the country as an advocate of non-cohesive gold used in cylinders. I make them myself, to suit the case in hand. For crown cavities, molars and bicuspsids, I use No. 4, soft gold made into cylinders and used without annealing.

If I used cohesive gold, I should prefer ropes and pellets for starting filling. Strips of light gold folded, or heavy gold No. 60—may be used, rubbed down by instruments, grooved one way.

For proximal cavities, I use pellets and strips, as above.

J. C. CLAYTON,

Indiana Dental College.

Painless Separating of Teeth.—Teeth can and ought to be separated with but little or no resulting soreness or pain. I think there is no excuse for the suffering many dentists inflict on their patients while separating teeth, preparatory to filling. The free use of rubber for such purpose is inexcusable cruelty. By the use of fibers of raw cotton drawn between the teeth, sufficient separation can be obtained in three days, giving the patient but little discomfort. When the teeth are very close, it may be necessary to use, at first, a thread or string. If the teeth are tender after the separation, I fill the space between them with oxyphosphate, which holds the teeth apart without pressure, and the following day they will be free from soreness. I urge those who have not made such use of oxyphosphate to try it. P. FISHER.

*W. H. M. is an M. D., D. D. S.

Treatment of Proximal Surfaces.

DR. SANFORD G. PERRY, in Pennsylvania Odontographical Society.

WHEN we come to consider the treatment of proximal surfaces, the simple conditions are replaced by complex ones that are so various, that one must have had many years' experience to be able to master them in all their details.

The first and most important question that is presented to the mind of every man who undertakes the care of proximal surface is the question of contour. There can be no evasion of this by one who desires to be equipt for the best work of the present day.

I will not pause here to go fully over the ground of the old discussion of so-called permanent separations *versus* restorations. I may as well state plainly at the outset that I am an uncompromising advocate of the restoration of the shapes of the teeth, as a general rule of practice. The reasons for this are so many that a long session would be required to relate them in detail; and, moreover, they are so self-evident that it would seem to be a waste of time and an affront to your intelligence to go over them. And yet, as hinted by your committee, after all that has been so conclusively written against the pernicious habit of filing, and all that has been done in practical work by so many of our best operators in proof of the advantages of restorations, it still remains with many an open question, and to-day, throughout the world, if men's opinions are to be judged by their works, there are many operators whom we all know and respect and some of whom we love, who are still so evidently bound by habit to the unconscious dangers and temptations of the old practice of filing that it would almost seem as if we were yet in the babyhood of our profession; so that, after all, it seems as if I must pause a moment to touch upon some of the dangers of the one practice and the advantages of the other, even if I betray my "bias" to the point of weakening my argument in your minds. This "bias" is not of recent date. It is of slow growth, and inevitable and unalterable conviction. In astronomy the "personal equation" has always to be taken into account.

If we take nature as our guide, and desire to attain to her perfection, it is evident that, between molars and bicuspid at least, the file should only be used as it may facilitate the operation of restoring with gold the lost shape of the tooth. * * * If there must be a departure from the natural form of the teeth, I would prefer in such cases the other extreme—that of leaving the gold in proximate cavities slightly projecting, so that it, and not the tooth, shall rest against the adjoining tooth, or the filling in the adjoining tooth, as the case may be. * * * I do not wish to be understood as advocating the building out of rounded knobs of gold between the teeth, so that they shall be held apart; but I would ask your attention to the propriety of packing the gold a little beyond the original outline of the tooth and finishing up with thin, towel-shape files and sickle-shaped scrapers, leaving the gold when finished *quite* as full as the tooth originally was, rather than pass between them a separating file, that would leave a flat surface. I should prefer a slightly unnatural fullness, than have a space, or an unnatural flat surface.

The point I wish to make, and which I cannot make in any other way, is that a very large proportion of the proximal fillings made on this general plan, after twenty years' use are in good condition, and a very large proportion of the fillings made several years later, when I had become a convert to Dr. Arthur's system, have since been removed, many of them at great cost of time and labor, owing to the difficulty of restoring the lost shapes of the teeth. If Dr. Arthur's book had never been published, and I had not been influenced by his earnest personality, but had held to my early plan of restorations, my patients would have been saved endless annoyance, and I should have had no dark period in my professional life to look back on. The publication of his book, and the circumstances of making his personal acquaintance, followed by a long and interesting correspondence with him, led me, step by step, to look with favor on his system, till I came to the point of mak-

ing all the spaces described by him. I became so demoralized as to willingly destroy the shapes of the teeth that I had before guarded with jealous care.

The result of that practice finally became a source of discouragement and mortification to me. Failures which formerly occurred only in reasonable numbers, under this system became surprisingly frequent. Irritation of the gums, and change of position of the teeth, which could not occur before, so frequently followed this practice that, after enduring it a few years, I was glad to return to the old one, of the restoration of the shape of the teeth. I have continued this practice to the present day, and I expect to continue it to the end. As I look back over the past twenty-five years I see so much to commend in it, and so little in the other, that there is left for me no other choice. Having been twice on one side of the question and once on the other, I feel entitled to speak with confidence.

In 1870 the restoration of the shapes of the teeth was not common practice. There was little to encourage one in that practice at that time. It was not unusual for the older operators, in examining a large contour filling, to probe along the cervical border, and with an ominous shake of the head predict that failure would follow there in a few years. But, in fact, many failures have not followed, even after all these years. These operators, taught by their experience to expect failures at all the sheltered points, expected it here. They failed to see that a new set of conditions had been established by which decay was almost certain not to occur. But they could not be made to believe this, and it could not be proven till after many years,—except to those who had the faith that is born of enthusiastic and irresistible conviction.

Fortunately, during that period when Dr. Arthur's earnest words—for he was as earnest as he was conscientious—had unsettled my convictions, there were still many patients whose teeth I never touched, only to restore them, and to-day they are the patients most creditable to me. Many of them have large contour fillings that cost pain and effort; but, once being done so that the teeth were held in position and the gums protected, the years come and go, and the patients forget that they have teeth at all. This is no fancy picture, but can be verified at any time. In my own teeth are large contour fillings, described in the article from which I have quoted, and put in by Dr. Varney over twenty years ago. They stand untouched from the day they were finished, and can be seen to-day by any one who cares to examine them. They have been a priceless benefit and comfort to me, and they stand an eloquent example of his matchless skill, and an unanswerable argument in favor of the restoration of the shapes of the teeth.

It is only after a long stretch of time that a just estimate can be made of the relative value of these opposing systems. It is easy to see that at first a clear gain seems to be made by making permanent separations. It takes years before the evil is noticed. It was partly this delusion that led me to adopt it; and it required several years before I saw that I was treading on dangerous ground. It was at first a great satisfaction to cut between molars or bicuspidis where a cavity was suspected, and to find it and fill it easily and quickly, and to flatter myself that the proximal surfaces were laid open so that they could be easily examined, and yet the gum but little disturbed. I could not then anticipate the slow change of position of the teeth; the disturbance of the festoons of the gums, owing to the loss of the bulge of the teeth that nature had designated to protect them; the recurrence of decay near the gum, causing the melting away of the shoulder that had helped to hold them in position; the slipping of food through, against, and under the gum; and, finally, the need of large fillings, that must now be made under most unfavorable circumstances, with the teeth tipped, the gums disturbed and sensitive, and the cavity extending on the root of the tooth, the task is much harder than if the cavity had, when of fair size, been filled by cutting down from the grinding surface and making a contour filling which should be so shaped that it would stand firmly against the neighboring tooth, and of such size that its borders would be free, except along the cervical edge,

when the teeth had settled to their proper place. If the cavity had been neglected till it had become large, if filled on the same plan, it would be still safer; because then the cervical border of the filling would have to go under the gum, and, if properly done, no further anxiety need be felt for it.

If the teeth chanced to be of good structure and the cavity small, how much better to spread them with a separator the thickness of a sheet of thin sand-paper, and cutting with small burs, or specially shaped, delicate excavators, from the grinding, lingual or buccal aspect, fill them with gold or amalgam, and allow them to go back to their natural positions, with their contour absolutely untouched.

Following this plan, it would not be probable that a patient would come in saying, as one did to me some years after the Arthur aberration: "This space between my teeth is giving me no end of trouble and annoyance, and I think there must be a cavity there. I have named it 'Perry's Chasm.'" Nor would there have been made to me the following remark: "Doctor, do you notice that on the left side, where, many years ago, separations were made between the back teeth, nearly all the cut surfaces have had to be filled; while on the other side, where no cutting was ever done, the teeth have never been filled and are still in good condition?"

Only a few days ago a lady said to me: "Do you remember that many years ago you wanted to cut between some of my back teeth because you thought there were or would be cavities there, and mother begged you not to do it, and it was not done; and do you see that all of those teeth are still sound? Mother knew; did she not?"

I tell you, gentlemen, mothers do know; the public knows, and you may reason with all the plausibility at your command, and you cannot overcome the widespread, instinctive dislike of that practice. You may flatter yourself that you have made a good argument, and as the patient does not get up and leave at once, you go on with your cutting and filing. But a year goes by, and your patient does not re-appear; he has quietly slipped away to some one of those men who try to leave the teeth as nature made them.

The public calls this filing "taking off the enamel." It is more than that. It is taking off from the operator the armor of courage and confidence in his own ability to make his work a real blessing to his patient, and leaves him bare and unprotected against the temptation of doing hasty, botchy and inartistic work. The evil effects of this practice are not felt by the patient only, but indirectly by the operator, who becomes demoralized and ready to cut and hack with the reverence of a bull in a china closet, unmindful of the fact that nature, in her constructive processes has produced in the teeth of man a marvelous example of the adaptation of means to ends—of means by which a given amount of tooth material is distributed so as to secure a combination of the greatest amount of strength with the greatest amount of beauty of form and outline. The marvelously beautiful curves and outlines that are shown by the teeth could have held the attention and fired the imagination of Michael Angelo, who would have found in them examples of arches and abutments for his studies in architecture, and of models of grace and beauty of outline for his works of sculpture.

The cusps of the teeth suggest Gothic domes, and half of a cross section of a bicuspid is a perfect model of a Roman arch. If the enamel could be taken off the dentine, as you would take a thimble off your finger, and could be viewed from the under side, it would present a series of arches and domes that might well serve as models in construction for the great temples of the world.

From the days when Dr. Dwinelle, in 1855, illustrated and described the method of restoring contours, and Drs. Atkinson and Varney, between 1860 and 1870, verified and extended that practice to the present day, many attempts have been made to follow it by men who have not always succeeded, because they have failed to see the full significance of a strict restoration of contours, and have not prepared their cavities so as to get free margins, and have not built their fillings out so that, when finished, the teeth shall have firm lateral support and the gum perfect protection.

It is unfair to admit the testimony of these latter operators against contour-filling. The system of restorations is one that must be practiced thoroughly, if practiced at all. Wherever contours are attempted, they should be made so as to touch at or near the grinding end of the tooth. Dr. Dwinnelle put the whole subject in a nut-shell when he says: "The teeth should be made to impinge at their point of largest circumference." There can be no compromise here. If even a slight space be left between them at this point, food will crowd through and lodge against the gum, and cause all the annoyance of the worst kind of permanent separations. This is so important that I should go to the other extreme and say that it is unnecessary, and sometimes unwise, to fully restore teeth that, from a loss of a neighbor or a change in the occlusion, must eventually move slightly apart. I think it better to anticipate such inevitable and permanent change of position, and make at once a free parallel-sided space down to the gums; for such a space is less annoying than one wide at the gums and narrow at grinding ends of the teeth.

You will see by this that I do not advocate contour for contour's sake. However much we may admire the form of the tooth, and however strong our desire to reproduce it, this must not be done if it is not to the advantage of the patient. The utilitarian side of the question must always be considered first. I wish to state this with great clearness, lest it may appear that my bias is for contour to keep alive my reverence for nature, and to satisfy my love of form and outline. It must be admitted that this parallel-sided space, so made that the teeth do not touch and the food does not become impacted against the gum, is one that, if it can be maintained permanently, gives a good result. It is the only separation between the bicuspsids and molars that, from any standpoint of observation, can be justified. In effect, in a very modified way, it is like the extraction of a tooth. But the conditions do not often occur where it can be safely made. When free to move, the teeth migrate; and such a space as this must not be made unless the teeth will be held in place by the occlusion. Movement of the teeth is always in the direction of least resistance; and if they are cut and allowed to move, not even an operator of long experience can always tell where they will be found after a few years. The cutting between sound teeth in anticipation of decay, so loudly lauded by some operators a few years ago, was a part of the Arthur system, and will die with it.

I have given some of the reasons why I am an advocate of the restoration of the shapes of the teeth. There are many more, and some of them are as important and convincing as any I have stated. In fact, there are so many reasons for that practice that, unless I deny the logic of experience and reject the evidence of my senses, there can be no choice for me but to adopt it. I cannot believe that my bias has led me to see the subject out of its true proportions; for, whatever the practice may still be, I hear from all sides strong expressions of regret that Dr. Arthur's book was ever published. And, by the way, is it not a curious fact that a man who had been one of the first to discover the cohesive properties of gold, by the means of which the shapes of the teeth could be restored, should have advocated the permanent separation of them? But even his faith in that system was not so strong as his book, to a superficial reader, would imply; and I could quote from his letters to me to show that the book was written for the profession as he knew it, and not for it as it might and would be. He was too honest not to admit that, for those who could and would make restorations, that was the best practice.

Some years since, Dr. E. J. Dunning, one of the most accurate workers ever known to the profession, said to me that it was the regret of his life that he had ever cut the teeth so much. And only a few days ago I had the supreme satisfaction of being strengthened and confirmed in my faith in this practice by hearing Dr. Benj. Lord, whose conscientiousness and earnestness are known wherever the language is spoken, and whose enthusiasm for the art of saving teeth grows stronger and glows warmer with his advancing years, say that it was the regret of his professional life that he ever fell into the practice of cutting away and shaping proximal sur-

faces to secure permanent separation after filling, and also that he advocated, as well as practiced, filling and shaping the teeth to prevent decay.

I have had deep feeling on this subject for a great many years, and you must pardon me if I give utterance to the satisfaction I feel when I hear such words as these. You must let me further express the pleasure I feel in knowing that Drs. Dwinelle and Atkinson, pioneers in this work, are still with us, spared to see the day when the irresistible tide of ripened professional judgment sets in their direction.

If I have spoken severely of the injuries done the teeth by the system of permanent separations, I must not overlook the fact that this is a system that has some merit, otherwise it never could have been so long and so widely practiced. There can be no question that many teeth have been saved by it. They ran the gauntlet and escaped the danger. And, after all, it is this risk and danger that I want to see our profession freed from.

We must also be careful not to allow a suggestion of harshness in speaking of the early operators who practiced the system. They did the best they could. They did not have the conveniences and appliances of the present day; and, moreover, sufficient time had not elapsed for them to see the evil effects of that practice. Dr. Arthur, who did more than any other man to establish the system, must be spoken of only in terms of respect; for he did in his day and in his way only what he thought was best for the profession. Nothing would be more ungracious than to speak in any but the most charitable terms of these operators, who did not and could not do in early professional life what can be easily accomplished at the present day. If we attempt to measure by too high a standard, where shall we find one of us who will not be too short? Let us overlook the past and be thankful for the bright future before us, remembering always that to be charitable and helpful to each other is to do most to advance the cause of our beloved profession.

There is still another side to the subject that must not be allowed to pass without consideration. Partly by its own impulse the pendulum swings to the other side of its arc, and some of the best operators, repelled by the evils of permanent separations, have gone to the other extreme, and in their eagerness to restore the teeth have cut them away far more than necessary, and have given themselves and their patients needless trouble in restoring them. This was an error constantly made by both Drs. Varney and Webb. If this can be justly said of those accurate workers of gold, with how much more force does it apply to those who follow the same plan, but are not such accurate operators? I am fully convinced that it is an error which I have many times committed, and it is one that any one may easily fall into if they have not come to have what I will venture to call reverence for the natural teeth. It is one that has been encouraged by the use of the dental engine and by the use of cohesive gold. A graduate of one of our colleges came to me with hardly a dozen excavators, and those of the most useless kind, in his outfit. He prepared his cavities mainly with his dental engine. It is not surprising that a man like Maynard refuses to believe that modern dentistry has made the progress claimed for it. A disheartening picture could be drawn if one felt inclined to contemplate the injury that has been done by confining operations on the teeth within such narrow lines. To ignore the advantages of soft foil and to be unskilled in its use is a misfortune to the patient, to the dentist and to the profession. The man is dwarfed who is not as ready to apply one system as the other.

It would be better for our patients and better for dentistry if we could keep more in mind the idea that the teeth are marvelous structures and worthy of the most patient and painstaking efforts of the most accomplished men in the world.

And whatever method is employed, they never will be saved without this painstaking care. While the physical properties of gold remain what they are, it is useless to hope for any easy method of filling with it large cavities on the approximal surfaces of the bicuspid and molars. It always has been and always will be absolutely impossible to get a good result without hard work, so that in selecting

the method we may as well dismiss at once the idea of finding an easy one. The search for such a one has resulted in an immense amount of bad work. The search for a rapid one is equally misleading. Under the pressure of a large practice it has done more to keep my own work below the standard I could wish to work to, than all other causes combined. If plastics are used the same patient care is necessary, if we are to get good results. In the very nature of things there can be no easy way to permanent success of any kind.

Abnormalities.

EDITOR ITEMS :—Inclosed find \$1.00, for which please renew my subscription to your valuable paper. I find it interesting, suggestive and helpful.

Allow me to mention two or three points from my recent practice.

Miss B., aet. 20, came for extraction of left inferior second molar, all other teeth, including wisdom teeth, in place. Inside cusps gone; on extraction, outside cusps showed roots absorbed like temporary tooth. No trace of roots could be found.

Mrs. K., aet. 19, showed right superior cuspid erupted at the age of seventeen, behind and between central and lateral incisors. All other teeth erupted in proper time and the arch full.

Miss S., aet. 17, showed thirty-two teeth in proper position. Temporary teeth had been lost when quite young, and all permanent teeth except right upper central incisor erupted in proper time. This did not erupt till after she was fourteen years of age. At the same time a conical shaped tooth appeared just behind it in the roof of the mouth. This tooth, when extracted, measured 15-16th of an inch.

Mr. S., in no wise related to the above, showed a very similar case.

Miss C., on her fourteenth birthday, showed thirty-two fully developed teeth. Can any one show an earlier eruption of the wisdom teeth?

Helena, Ark.

R. E. PRETLOW, A. M.

Unnatural Natural Teeth.

I EXTRACTED an inferior exostosed dens-sapientia, with folds like a rhinosceros, from the mouth of a middle-aged female Ethiop, who in a flash exclaimed, "gosh, boss, its like a cyclone, ain't it?" This tooth measured two and one-eight inches in girth the long way, and one and one-half inches the other. Also an upper dens-sapientia, almost as round as a bullet, from a splendidly developed daughter of Erin. A first inferior molar, from a female quadroon, that measures one and one-eight inches, transverse diameter. I have also one I extracted from a handsome mulatto slave, in Tennessee, which I call my country mitten, owing to its strong resemblance to a mitten. One with a wart-like protuberance just at the junction of the enamel that I extracted from a six-foot Chinaman; and a lower cuspid, with two very distinct roots about half their length and thence marked with a distinct groove to the enamel, from a male German, 50 years old, small stature. One upper molar extracted from an Indian over six feet tall; two of the roots are normal, and the other flattened, and measuring fully one-half inch across the apex. I have many upper molars with *four* roots; probably a dozen lower molars with *three* roots; have, also, several bi-cuspid with three roots; one of them is from the mouth of a pretty daughter of Judea. From a young white woman, I have two upper cuspid considerably curved, that measure one and six-sixteenth inches long; her lateral incisors one and one-eighth inches long, central incisors one and one-sixteenth inches; her longest molars one inch, while one of her *bicuspid*s is one and three-sixteenths inches long. I have also a small handful of teeth so grotesquely worn by mal-occlusions, that they remind me of the rude implements of war found on the upper Congo. I have many other teeth of the genus-homo quite phenomenal, that I extracted while in South America. These are the trophies of a practice that had its origin in Philadelphia in 1853.

W. W. MORGAN.

Camden, N. J.

Dr. Meriam's Files.

Philadelphia, March 6, 1890.

ITEMS OF INTEREST :

May I ask it as a favor, that you will publish the accompanying letter from Dr. Horatio C. Meriam. The injustice done Dr. Meriam by the error in publishing my name in connection with those little finishing files, I desire to have fully corrected, and also to emphasize not only the fact that my attention was brought to this valuable little instrument by Dr. Meriam, but that he was the sole inventor of them, and had given it to the profession. Of the fact that he was the inventor, I must confess I did not appreciate till quite recently, tho the Doctor assures me he thought he had made that plain when he first showed me the files, but my obtuseness and his modesty prevented me in some way from fully appreciating that fact. It is not too late, however, to make reparation by letting the inventor speak for himself, by the publication of his letter.

C. N. PEIRCE.

257 Essex street, Salem, Mass., February 28, 1890.

Dear Dr. Peirce :

Your favor was received this morning, together with a copy of the ITEMS OF INTEREST. I do not see that journal, and so was not aware you had ever written them regarding my files. Regarding editors, they have no right to speak for me or the profession, for I do not know whether they speak as traders or editors; but do know that everything they touch, they trim, so that the credit of production is taken from the profession and given to themselves. The word "suggested" seems to be one of frequent use with them, and it always implies *their* ownership and control, leaving to the profession the honor of suggesting.

Suggestion implies something hinted, thought of, not performed or completed by the person making it. We *direct* our pharmacist, instrument maker, or workman.

The advertisement I sent you was torn out by one of my friends and sent me, and I have already heard them spoken of as "Peirce's files." Your letter to the journal is unfortunate in the fact that it does not contain a recognition of my invention of the files or the profession's ownership, and for all any one would know by reading it, the files may not have had their origin with me, or with any member of the profession, but may have been something I found outside, and "suggested," that is, hinted, to you.

The files I made after a study of the anatomy of the parts on which they were to be used, and I made my copper patterns, went to the factory and personally directed the workmen; they are therefore "Meriam files," are the property of the profession, and have not been "suggested" by any one. I should not expect a combination trader, or so-called editor, to act rightly or for the best interest of the profession in these matters; neither do I recognize their right to put "suggestion" into my mouth. That the files might be clearly the profession's, I had them made outside the combination, in order that all who wished might deal in them, and I have no financial interest in them other than this. My article describing them will appear in the next Archives. With the editors, or traders acting as such, who have used your name in the attempt to destroy my claim for inventing the files, I leave you to deal, requesting, however, if they decline to apologize, that you publish this letter.

HORATIO C. MERIAM.

Bro. Meriam has a singular spite against dental journals and editors. Prof. Peirce showed us the files, and we thought we were doing Dr. M. a merited compliment when we asked Prof. Peirce to write us a notice of them that they might the more prominently be brought before the profession. What an offence we have committed! And how singular that friend Meriam gives these patterns to the profession, and yet that they must come only through *his* manufacturer!—ED. ITEMS.

The following letter was read at the New York Odontological Society meeting in June last : No. 257 Essex street, Salem, Mass., June 14, 1889.

DR. J. MORGAN HOWE, New York City :

Dear Doctor :—I send you two files for presentation at the next meeting of the Odontological Society. They are the first two of a set that I am having made, and I send them as the full set will not be done in season for your next meeting.

These are intended for use in finishing proximal fillings near the margin of the gum. They are safe-back, that they may not chafe the gum or rubber-dam, and safe-sided that they may not injure the adjoining tooth, or filling. They are curved so as not to strike the roof of the mouth, and so tempered as not to break easily ; they can be made thinner by grinding on the safe side, if need be. I have had them made so that we can honestly claim that they are a professional instrument, and they can be ordered through any instrument maker who wishes to aid the profession. At the Massachusetts meeting all were sold that were made ; but more will soon be ready.

Yours, truly,

HORATIO C. MERIAM.

Dr. Litting moved that the communication be accepted, and that the thanks of the Society be returned to Mr. Meriam for the presentation made. Motion carried.

Capping Pulp.

In Pa. Odontological Society.

DR. J. N. CROUSE, of Chicago.—I stand here an advocate of pulp capping and claim a successful practice in this line. Some are not able to cap pulps ; I am and successfully, and consider the destroying of the pulps and the filling of roots the last thing to do. I formerly filled roots with gutta-percha and gold, using a little gutta-percha in end of root, which does not prevent me from forcing the gold as far as it will go, the gutta-percha occupying the space which would otherwise be left vacant, unless some plastic was used.

I should cap the pulps of all teeth when the dentine is sensitive ; that is, when it responds to scraping of excavator and gives off sensation, which I believe to be one of the best tests of a healthy pulp. I should apply carbolic acid freely, getting a complete coat of coagulated albumen over the point of the exposure, cap with oxychloride, being very careful to apply the capping in a skillful manner, believing it to be one of the most delicate operations in dentistry, and being sure to have a good solid base for the cap to rest on, having removed sufficient of the softened portion to make sure that the cap rests solid, and filling over this with whatever material seems best for the permanent filling.

I do not wish to be understood as claiming that all pulps that are capped remain alive ; some die, giving no trouble to the patient, but remaining entirely comfortable and the teeth not discoloring ; and only by applying an extreme of cold and heat would you know the pulp was not alive. Some will give trouble, and the patients will come back for treatment. So it is with quite a per cent of teeth, even when the roots are filled as well as can be.

Dr. C. E. Francis, New York City—I do not think of devitalizing a freshly exposed pulp. I have for many years been in the habit of capping pulps when newly exposed, and have written several papers on the subject, giving my reasons for so doing. As regards devitalizing freshly exposed pulps, I believe the time has passed for this sort of practice.

As regards the material for filling root canals, I have many times heard it argued that it made little difference what substance was employed, if only the canals were properly prepared before receiving the filling ; and it seems to me this is about the case. Gold, tin, gutta-percha, wood, cotton and the zinc stoppings have all been used with success. I have seen roots filled with cotton that have remained in good condition for many years. A prominent and excellent dentist of New York

has used cotton as a root filling in very many instances, and a number of teeth so treated have come to my hands. I had occasion to remove the filling of several of these teeth, and found the cotton thoroughly packed and apparently as clean and odorless as when introduced. Packed in this manner, the cotton would not be apt to absorb moisture from the foramen at the end of the root. Success in root fillings is in great part due to the preparation of the canals, much more so than in the choice of materials used. They should be thoroughly cleansed of all debris, washed well with tepid water; disinfectants, or antiseptics injected, and made perfectly dry with warm air. I am not sure of perfect results. But as regards freshly exposed pulps, I would always endeavor to save their vitality, and if successful but once in three cases, it is worth our effort to try. In the majority of cases, however, where the pulps are healthy, I believe they can be saved.

Dr. W. A. Atkinson, New York City—I never allow my pupils to kill pulps except when they cannot control the case, as in persons who want to travel, and where pulp stones must be removed to secure usefulness of the root.

We know that chloride of zinc and oxide mixt together produce a hard body, and whenever any body is crystallized with a great number of crystals, there must be spaces between. It is the zinc that acts upon the fibrils forming a "hydrochloride of albumen" in the root. When the root is well filled with any fit substance it should never be removed. Because if you have a tooth filled to or even a little beyond the foramen, the end becomes encysted, and there is no occasion to remove it. There is a great deal that goes to make success that is not scientific; tho it may be the highest science occulted.

Dr. W. H. Dwinelle, New York City—Dr. Perry made the remark that I had had an experience which antedated the experience of many in filling root canals, and I might say that also with reference to the capping of nerves.

I think it was in 1842 or 1843, I was constrained to advocate the retaining of vitality of the nerves of the teeth in cases of deep-seated caries. It was customary with many of us, and with the profession generally, at that time, to excavate a cavity till all the decay was taken out, and when the decay was deep and the dentine largely disintegrated, it involved the uncovering of the nerve; and according to the orthodoxy of the day, a nerve exposed must necessarily be destroyed, at that time I advocated retaining the vitality of the nerve leaving this partially decomposed bone as a capping for it. I can show you to-day evidence to persuade you there were instances wherein this partially decomposed bone, allowed to remain, has been recalcified. It is the office of the nerve to deposit secondary dentine, and cover its retreat, so that in extreme old age it is entirely obliterated. I was abused roundly for it, and in conjunction with articles published on the subject, I was accused of leaving decay in the tooth, a very unpopular thing, especially as our operations are designed to save the teeth from decay.

Now, in regard to exposure of the pulp, I was, perhaps, one of the earlier dentists to recommend saving the nerves of the teeth. I have been successful in a large majority of cases. I have within a few weeks examined some teeth whose nerves were exposed and capt away back in the forties, and found them entirely intact and alive and covered with a calcified capping. With regard to filling nerve canals, I think I have the advantage of the experience of those as far back as Hudson and Maynard. Their methods are familiar to you all. My method of filling nerve canals, if it is a case when it is absolutely necessary for it to be destroyed, is to devitalize it, remove immediately and fill at once. If it is an old tooth, dead, and charged with decomposed matter, adopt measures to absorb it out; treat thoroughly till you are satisfied the fibrils have been thoroughly coagulated, sterilized and inert, then fill it thoroughly.

For years I filled with gold, tho not so much now, not the entire canal. I roll my gold on a Swedish broach so that it forms a sort of attenuated cone, measure the length of the root, and then take a Swedish broach and make a slight right-angle at

its extremity. It is then made to slip down till it has passed the foramen. This can readily be appreciated by the delicate hand of the manipulator. It is then marked and drawn out when the rest of the filling instruments are gaged by it.

It was my custom to fill nerve canals, till recently, entirely with gold—always with gold at the extremity. I rarely have any trouble with teeth; when I do, I consider that I have not done my work thoroughly; that I have not allowed sufficient time between my treatment and filling. If I have any trouble, I do not remove the filling at all, but resort to external treatment with the drill. I do not think it extremely painful. I simply put a drop of cocaine on the gum over the extremity of the root, and with a drill suddenly open, through the process, to the extremity of the root, and there I accomplish all that I could by taking the filling out. I rarely have trouble after this.

I am not in favor of the use of cotton, pure and simple, for filling nerve canals; if you use it in conjunction with rosin, wax, or oxychloride of zinc, the virtue of the operations must be attributed to these materials, and not to the cotton, which only facilitates their introduction. More depends on the intelligence, skill and delicate manipulation of the operator than anything else.

Removable Bridge-Work.

DR. T. S. WATERS, BALTIMORE.

IT is the experience of all dentists that when a plate is used with a small surface, the pressure that is brought to bear on it in the process of mastication causes a rapid absorption of the subjacent tissues both soft and hard, and it has been found necessary in the insertion of a small number of teeth, to avoid as far as possible this bad result, to make the plate broad, thus distributing, what may be called a fixed amount of pressure over a broader mucous surface lessening the evil from absorption. Where plates are used, this pressure should, for obvious reasons, be so distributed as to bring as great a proportion of it over the hard or true bone, and as small a proportion over the softer alveolar structure as the case will admit.

The necessity of guarding this point will be better appreciated if we give consideration to the great force exerted by the masseter muscles in mastication.

One of the offices, then, and an important one, of a plate bearing artificial teeth is to so apply, divide and distribute the pressure on the mucous surface as to produce the least injury to the subjacent tissues, and I consider this point of so great importance that I hold it is wrong to dispense with the plate (as is done in permanent bridge-work) because the use of a plate in bridge-work relieves the teeth and roots to which the denture is attached of much of the strain that is brought to bear in mastication, and transfers and distributes it over the mucous surface.

Because the denture is retained securely and steadily in the mouth, yet it is easily removed and replaced at pleasure by the wearer,—the pressure and strain are distributed properly over all structures and tissues available for that purpose, and the roots and crowns to which the denture is attached are so prepared that there is no place for the lodgment and retention of food, and when the denture is removed, both it and the mouth can be thoroughly cleansed.

It is also so evident as not to require explanation that should the roots or other tissues be attacked by disease, thus requiring treatment, or should repairs to the mechanism become necessary, the removable bridge-work offers facilities for those purposes not to be found in that which belongs to the permanent class.

I do not claim that the idea of removable bridge-work is original with me, but I do assert and claim that I constructed the first really practical piece of bridge-work of which the wearer had perfect control as to removal and replacement, and in which, by the means adopted, the best possible hygienic condition is attained.

Having accomplished this much, I was led to devote my studies and energies to the combination and application of such devices as would effect these desirable results.—*Pa. Odontological Society.*

Filling Roots with Cotton.

DR. JOSEPH HEAD, PHILADELPHIA.

Discussion in Penna. Odontological Society.

SAYS it has been justly said, that oxychloride oxyphosphate and gutta-percha are porous; that, taking up the fluids of the blood, they become saturated with putrefactive matter. Gold has been lauded as a root canal filling, and when the apex of the canal can be easily reached, gold certainly can be legitimately used, as it makes a thoroughly tight joint. But it is universally known that the roots of molars usually are flat and tortuous, that the accurate adaptation of either gold or gutta-percha is impossible. And when the utmost care has been used, and even when the canal has been thoroughly filled, the risk of alveolar abscess is always present? There always is a strong probability that the outer portion of the apical foramen is unfilled.

If, therefore, recognizing these facts, a dentist fills a canal with an irremovable filling, should trouble arise, and the patient return, the uncomplimentary remarks of the patient will have some degree of justice.

The dentist is in a bad scrape; he does not know what to do; the tooth is jumping; the patient is in anguish and wishes to be relieved at once; the gas is imprisoned at the apex of the root, and the unfortunate practitioner seizes his engine and proceeds to vent the aching tooth. He has the unpleasant task of perspiring at a hard task; but, what is worse, he almost kills his patient.

How much better would it have been, both for him and his victim, if, instead of the irremovable filling, he had inserted a cotton dressing, soaked in carbolic acid. Had the cotton been used, two minutes' work with a spear-pointed drill would have given the patient almost instant relief.

DR. L. ASHLEY FAUGHT, PHILADELPHIA:

I have in my practice seldom filled a root with anything other than cotton, and, if my experience with it is as favorable in the future as it has been in the past, I shall continue to follow the same line of practice. Dr. Head has presented to you the reasons why he likes to use cotton fillings, and I agree with every sentence.

There is a little word of caution, however, which might be well to mention, that it is important to be careful in choosing with what you saturate your cotton. There are drugs which certainly seem to disintegrate the fibre of the cotton, and if you should experiment first with one thing and then another be careful, for, on removal you may find the cotton broken up and in such a shredded condition that it will be worse than boring out a gold filling, and difficult to get at the apex.

My choice of dressing is the one suggested by Dr. Kirk: iodoform disguised with oil of cinnamon. It seems to be the most satisfactory thing for a final filling; and when the cotton is packed thoroughly and tightly into the root, it is as solid and impervious as anything can be.

DR. GEO. S. ALLAN, NEW YORK CITY:

I like a bold man, and therefore I am very much pleased at the stand taken by the two gentlemen who last spoke to you in favor of that much-abused cotton filling. I have used it for years, and my success with it has been as favorable as with any other material, tho I have used gold largely. I uniformly use it where a root can be easily filled or gotten at, cotton saturated in some strong antiseptic, such as oil of cloves, or better still, tyron, can be packed more thoroughly into a fine root canal, filling it up more perfectly than any other material I know of; and I have often taken out cotton that has been saturated with tyron, packed into a root for 15 months, and it was just as sweet as the day it was put in; an almost imperceptible odor of tyron could be distinguished.

It behooves us to be careful in condemning our material in use as root filling, owing to popular prejudice. There is a prejudice against cotton. Pure cotton, if

packed into canals, and then excluded from the moisture of the mouth, makes as perfect a filling, I may say, as gutta-percha. It is not as porous, and therefore is not as subject to the changes that gutta-percha is liable to. One of the best methods of preparing cotton for root filling purposes is as follows: Soak it for some time, beforehand, in one per cent solution of mercuric bichlorid. Then dry it carefully. Then, before using it, wrap it carefully around the proper broach, taking pains to employ only cotton enough to fill the canal, and give it a solution of resin in ether, dry with bibulous paper the excess of resin, and then pack it into the canal. Cotton so prepared is almost indestructible. Bacteria cannot obtain a footing in it or grow in its meshes. It is taken for granted that all root canals are sterilized before filling, whatever the nature of the filling material employed. I advocate cotton only as one of many useful materials available for the purpose.

An Open Letter to Dr. L. P. Haskill.

FOR THE ARCHIVES.

YOU ask why the absorption is greater in the lower than in the upper jaw. There are two causes. The lower alveoli is thinner, and the same appears greater when it is not so; gravitation of food, pressure of tongue and lips, and usually pyorrhœa alveolaris attacks the inferior first.

Your heavy plates are wrong. It is not weight, but size, fit, and articulation that holds the plate.

In taking an impression for a lower flat jaw, use a flat cup nearly as large as will go into the mouth (plaster thin), to force the cheeks and lips out; after it is adjusted, raise the tongue and work it from side to side until the plaster sets; when it is out, feel alveolar ridge, then scrape the center of the bottom from the second molar on each side—and in some jaws there are two ridges where the molars were: each should be scraped separately, and where there are any lumps or sharp edges, scrape also, so the plate will press hardest on the soft parts. The plate should have a wide rim on the labial side—for the cheeks and lips to hold to its place.

On the lingual side leave it flat and as wide as the tongue will permit, and concave from the edge to the teeth, to give room to the tongue.

For a high ridge, scrape so as to raise the plate off the top, or high parts, and do not let it run too low down.

Have not said anything about upper plates, as you understand how to make them; only don't let it run on the soft palate.

To get an articulation, put tri-plates in the mouth and mark center; adjust teeth on both plates; have bicuspid and molars as long as incisors; have patient standing, as they bite truer than when sitting; after closing the mouth, holding upper plate with the tongue, look at it; if it is not right, change the teeth till they are, fasten with wax and put them in a Bonwill articulator, which permits of the lateral and forward movements of the jaws. If the bite is right, and teeth proper length, there will be a harmony of the face, lips and teeth. Grind the lower front blocks first, then the upper front blocks; move the articulator so as to have the lateral and forward movement of the jaw.

Grind the lower bicuspid next, then the upper bicuspid; leave them long enough to allow the incisors to slide past one another with the different motions; make the first lower molar a little shorter than the bicuspid, and the second molar a little longer, with the back corner a little higher than the front corner. The upper molars: The first tooth should be the longest, and set so as to articulate with the first lower molar; second upper molar should be shorter, so as to barely touch the lower molar: so when the teeth are closed the lower plate will be held from protruding.

The outer rim will assist in holding it down, and to its place.

I have made lower plates seven-eighths of an inch wide, worn with comfort.

Make the hardest bite on the bicuspid, to make pressure on the middle of the plate.

Bourbon, Mo.

SOL HORINE.

Suppuration of the Antrum.

DR. WM. CARR, NEW YORK.

I AM convinced from the number of cases that have been under my immediate observation, that fully 80 per cent of the cases of suppuration of the antrum are caused either directly or indirectly by diseased teeth. When we consider that the teeth are separated only by a thin layer of bone, and, frequently, the roots of the teeth form protuberances in the floor of the antrum, or actually penetrate into it; when we consider the vascularity of the alveolar process, and the frequent pathological changes of the teeth and their alveoli—these changes being pericementitis, alveolar abscess, alveolar periostitis and necrosis—we can easily comprehend why diseased teeth cause such a large percentage of antral disease.

If the trouble arises from decayed teeth, and necrosis is present, all necrosed bone should be removed. Before commencing either to remove necrosis or to make an opening into the antrum, a 10 per cent solution of cocaine should be applied to the gums three or four times to produce local anæsthesia of the mucous membrane. The operation is then performed with but slight inconvenience or pain to the patient. The opening being established, the antrum should be thoroughly cleansed with tepid distilled water, to which a little salt has been added, till all traces of pus have disappeared. If the discharge is offensive, the cavity should be syringed with permanganate of potash, and dressed with a stimulating solution composed of carbolic acid 1 drachm, glycerine 1 ounce, and distilled water 7 ounces. Or, if preferred, Dobell's solution or listerine may be applied. The cavity should be cleansed twice daily with salt water, followed by either of these stimulating solutions until the discharge diminishes, when this treatment once daily will be sufficient. Should the orifice in the meatus be closed by inspissated mucus, the patient should be instructed to use either of the above stimulants several times daily, by means of a nasal spray, until the obstruction is removed.

Some practitioners insert a silver drainage tube through the orifice, which is kept in place by ligatures. I see no advantage to be derived from this practice, as thorough cleansing twice daily is all that is required. Besides, there is always the possibility of food being pressed through the tube into the sinus, or of becoming clogged at the entrance, so that the end sought is not attained. I prefer the method suggested by Dr. Abbott, of closing the opening by means of a broom straw, serrated and wrapt with carbolized cotton, then pressed firmly into place, and retained with ligatures to the teeth. If there are no contiguous teeth, a plate may be inserted with a projection one-half the size of the orifice, and this projection wrapt with carbolized cotton to fill the remaining space. This is sufficient to exclude all foreign substances. After the discharge ceases, the cotton should be diminished in quantity daily, thus permitting the orifice to close gradually. This is the only treatment that I have used, and it has been uniformly successful.

Having business in Philadelphia last week, I accepted an invitation to attend a clinic given by Dr. C. M. Richmond, at the new Dental Depot of Gideon Sibley, 1214 Filbert Street. Many of the leading dentists were present, besides a number of college students. Every body was pleased with the work done, as Dr. Richmond's style and manner of working is so easy and natural that whoever see him work are confident that they can do bridge and cover work successfully. We observed that Dr. Richmond was using a dental engine, but where it was and how it was propelled for some time appeared a mystery. The crowd pressed the chair on all sides, leaving no place for any ordinary dental engine; enquiring, it was pointed out to us that the engine was under the foot-board of the dental chair, and the pedal was pivotal and operated on either side and between the feet of the chair. This engine was invented in London by Dr. J. S. Campbell, and is now being made in this country for the American market.

A Simple Method of Making a Piece of Bridge-Work.

DR. T. A. LONG says: Prepare the teeth or roots that are intended for your anchorages in the same way as usual; make gold caps or crowns to fit over them. Make the gold crowns either with gold or porcelain cusps. Place the gold caps on the anchorage teeth, and take an impression in plaster or modelling compound. If the gold caps do not come away with the impression, take them out of the mouth and place them in their right position in the impression and cast the model in plaster. When taking the impressions, take two of them; one with the gold caps on the anchorage teeth, and one without. Make a model from the last named impression for use later on.

Now take a strip of wax about 1-16 of an inch thick and the width of the ridge, or as wide as the case should be when finished, place it on the model reaching from one gold cap to the other. Place on this wax a piece of gold plate sufficiently heavy to give the necessary strength, and long enough to reach from one gold cap to the other, and folded at an angle, thus L, its entire length, curved longitudinally to conform to the bend of the ridge. Place this gold angle bar so that the outer edge of one angle will point toward the labial surface or cheek, and the other edge of the angle toward the top of the piece. Now invert this and solder each end of the gold angle bar to its respective gold crown or cap. This should now be tried in the mouth, and any correction that may be necessary to fit it can be made.

It will be found that the gold angle bar will be raised a slight distance from the ridge. Take the new model and place the skeleton on it; use gum or plain teeth, the same kind as are used for rubber work, wax up the piece same as for a rubber plate, covering up the gold angle bar entirely, and allowing the wax model to rest upon the ridge. A slight groove, running around near the edge of the piece on the plaster model, will leave a corresponding ridge on the finished piece, which will prevent seeds or particles from getting under the plate. If there should be any shrinkage of the gum, the piece can be kept clean underneath, as then access can be had to that part. If no shrinkage takes place, experience has taught us that no bad effects follow placing the piece firmly on the gum.

The advantages of this bridge are: Great strength, simplicity of construction, freedom from retaining secretions under gold plates or gold backings on teeth, as there are no points to retain saliva. It is not liable to be broken, as the teeth can be heavy and strong, and be supported by the vulcanite. The appearance in the mouth is more natural, as it avoids such a great display of the gold.

The above was described to me by Dr. Wm. N. Morrison, of St. Louis, and, coming from such an eminent practitioner, I am under the impression that it must be practical.—*Dent. Review.*

Arrangement of Air Chambers.

WHEN we look for the forces which operate to displace a plate from its place in the oral cavity, we find these forces come to a focus just behind the rugæ, on the median line, and to counteract their effect, and make the plate steady in the mouth, we must apply pressure on this portion, which is from the rugæ to within about one-fourth of an inch from the edge of the plate. Some place the chamber over the rugæ. This is a bad practice, because the irregularity and roughness causes the edges of the air-chamber to fit badly and sink into the flesh. Again, when we bring the chamber too near the point, we find a slight yielding of the gums in using the incisors, and the plate tilts, throwing the posterior edge down.

In partial and full sets we leave a margin of one-fourth of an inch between the chamber and edge of the plate.

If it be the first plate worn, it is best to make the chamber quite small, as each plate that the patient wears must have a larger chamber, and the bearing surface of the plate is decreased in proportion to the increased size of the chamber.

DR. B. N. BAILEY.

The Use of Matrices.

DR. SANFORD G. PERRY, OF NEW YORK, IN THE PENNSYLVANIA ODONTOLOGICAL SOCIETY.

FROM the first introduction of matrices by Dr. Jack till the last few years, I have been rather shy of them; but now I have come to use them in some form in most cases where the opening into the cavity is free.

The form I use most, perhaps, is a very thin one of steel. This matrix I use of different widths. If the opening into the cavity is not free, and there is danger that a matrix will shut out the light and obstruct the cavity, I use only a narrow band along the cervical wall. This serves as a guide in packing the gold and prevents the plugger from slipping over the cervical edge. If the opening into the cavity is large I use a matrix of full width, and let it serve as my guide in reproducing the shape of the tooth. These matrices I hold in place with the separators, which clasp them near the gum and hold them near the cervical wall, where they most need support. Sometimes, in addition, I secure them at the cervical wall with a simple wedge of wood.

I have also devised a means of holding them in place by the use of a stiff rubber dam clamp, on the jaws of which are soldered lugs or wedges, which hold them firmly by means of the spring of the clamps. I have also a form which is made more adjustable by allowing the lugs to rotate. This is in the form of the bail of a pail, and can be turned down out of the way either in front or back of the cavity.

Another form of this holder, which I have used for several years with great satisfaction, is made in the same manner, but is fastened by a screw, which holds it more securely than is done by the clamp or the bail. Perhaps the greatest merit of this device is that it is quickly applied. It is always ready, almost always fits, and is put on or off in an instant. I have very often used with the greatest satisfaction the first simple matrix, devised by Dr. J. A. Woodward. It is rather thick and very strong, and where there is room to apply it, it is one of the most satisfactory I have used. Another matrix, devised by Dr. W. A. Woodward, and held by screws impinging on the adjoining tooth, I have used countless times with the greatest satisfaction. By loosening the screws gradually, the filling can be bulged without unseating the matrix. Of course, all these matrices depend on the adjoining tooth for support. Dr. Guilford's, as well as Dr. Brophy's matrices, have the merit of depending for support only on the tooth operated on, and are of great value. I have devised a matrix which is held also by the tooth, being operated on by tying with floss silk, or brass wire, which is threaded through holes at the ends. But Dr. Klapp recently exhibited in New York a somewhat similar one, tho he uses a single thread of silk, which is threaded through the two holes, and passed several times around the tooth and the matrix and then tied. This holds the matrix closely at the cervical wall, and it is a decided improvement over my method of tying it. Sometime since, Dr. Andrews described a method of tying a matrix, but I do not remember that he made holes through it in this way.

I have sometimes used Dr. Klapp's matrix when I think no other form would have done so well. It is so simple, the wonder is that it had not been thought of before. With these, as with other improvements in our art, complex and laborious means are often first tried only to be laid aside for those more simple and direct. In the use of any matrix, the whole attention must be applied to the periphery of the cavity—the ultimate point where the matrix and the edge of the enamel meet. The most serious objection to the use of any matrix is the great danger of failing to get a solid condition of the gold here. My fear of failure at this point is so great that I fill many cavities without any matrix. I can then see and know that I have my edges perfect as I go. In starting a large filling it is the practice of many operators to use soft gold in large masses, prepared either in the form of ropes, strips or cylinders. I doubt somewhat the wisdom of this plan under all circumstances. There

is the temptation to use the gold in such large masses that it will not be thoroughly condensed, and there is also danger of the movement of the gold unless it is very firmly and carefully held till the filling is well advanced. If the gold is not solid along the cervical border it will not finish so as to permanently protect the edges. If the different forms of mallets are used here, the force may be sufficient to shatter the enamel border. This, I think, is a most common occurrence, particularly when that invaluable instrument, the automatic mallet, is injudiciously used here. If one or two small retaining points are made, and crystal gold in small pieces is packed here with rather delicate instruments and hand pressure, a perfect adaptation can be easily made, and when the filling is finally finished, the gold along the cervical border will be solid, and will cut and finish like coin. After a little gold is packed along this delicate border by hand pressure, any one of the mallets may be used to great advantage. The Bonwill mechanical mallet is a marvellous instrument, and, in my judgment, is the most valuable of them all. I never use it in large operations without feeling that its inventor has conferred a lasting benefit on the profession. For crystal gold it is perfection. I consider it more difficult to get a good adaptation along the side walls than along the cervical border, where the gold is packed directly against the walls. In cases where one must work through a narrow opening, and where the gold must be packed almost by guess, I should prefer the foil to crystal gold, and should try to get the best result I could with strips packed by steady hand pressure and then followed by the automatic mallet.

I do not expect my objection to the use of large masses of soft gold along the cervical border, packed with great mallet force, will meet with favor. But here again I must fall back on my own experience, and I must say that the old fillings, which have lasted so well, were almost invariably made with cohesive gold throughout.

The Ignorance of Physicians.

A RATHER interesting case presented itself this morning, and one which still further impressed me with the ignorance of some physicians in diagnosing particular cases. A girl, aged fourteen years, came into my office with her father, who remarked that he had a pretty bad case for me (presumably this idea was fostered by the physician), and further said the teeth and face had been paining for two or three days, and as the trouble seemed to be only partially in the teeth, concluded to consult a physician, who examined the mouth, giving as his opinion that a decayed tooth was the cause of the trouble, and advised her to have it drawn. Acting on this advice she presented herself to me. The first molar had a small alloy filling in the crown. But immediately in front of this tooth was the second bicuspid just emerging from the gum, and very sore when touched, because there was not room for it to come between the first bicuspid and first molar. This was the cause of all existing trouble. When the father was shown the coming tooth, and the cause of trouble was explained to him, both were satisfied there was no necessity for extraction.

The longer and more I peruse your journal, the more I am impressed with its worth. I am having those for the past year bound in calf.

Ottumwa, Iowa.

J. W. SOULE.

Oxyphosphates are, in many respects, the best fillings that we have, as they are readily and comfortably inserted, and come the nearest to forming a chemical union with the walls of the tooth, stopping all decay by the cut off of the supply of oxygen. The greatest trouble is they are not permanent, and are very good conductors of heat and cold. There is one peculiarity, that it is almost certain death to the pulp, if placed in anything like proximity to it, and it seems to mummify it, and yet I have known that a great many use them in badly decayed teeth as temporary fillings to await developments.—*Dr. H. M. Harned, in Review.*

An Australian Lady Medico.

MISS ADELA M. KNIGHT.

AMONG the Australian natives who have made a mark in the world may fairly be included Miss Adela M. Knight, daughter of the Rev. Samuel Knight, a Wesleyan minister in Adelaide (South Australia). Miss Knight was born in Ballarat (Victoria) in 1865, but has lived the greater part of her life in South Australia. She developed a marked taste for acquiring medical knowledge under the teaching of Dr. Stirling, and, after attending the advanced school for girls, matriculated in the Adelaide University in 1883, winning Sir Thomas Elder's prize for physiology. She was also successful in matriculating for the University of London; the papers having been forwarded to Adelaide for the purpose. In 1885 she left Australia to take place in that popular abode of learning. In 1886 she gained the histology prize; and in 1888 she passed the Intermediate Examination, and took her M. B. degree in the first division. A cable message received from London last week announced that Miss Knight had been appointed resident medical officer at the new hospital for women and children.

American Degrees in Germany.

LATE reports state that the University of Berlin refuses to recognize degrees conferred by American medical colleges, tho those of all other countries are accepted. If we divest ourselves of all native feeling, and look at the matter impartially, it is not difficult to find good reason for this action. The utter neglect of our general and State governments has left the teaching of medicine to the private individuals who secure charters from various authorities. Whenever any official status pertains to a college, the European schools have shown themselves ready to accord due recognition; as in the case of the University of Michigan, which long enjoyed a distinction abroad not accorded to schools ranking very much higher in public estimation at home. Whenever the general or State government will assume the duty of issuing the license to practice, the American physicians abroad will be put on the same standing as those of other countries.—*Times and Register*.

Campho Phenique.—"I consider campho phenique indispensable medicine in my case of remedies. I use it for local anæsthesia in sensitive cavities with as much success as any other local anæsthetic; as a dressing to all prepared cavities before filling; in all root canals after the removal of pulp and nerve, as a dressing in all pockets about the teeth after the removal of calcareous deposits. In fact, it is no longer so much a question with me, where to use it, as, where not to use it.

"Some dentists asked me not long since what antiseptics and germicides I used. I said: First, I use campho phenique; then, secondly, I use campho phenique; and in the third place, I use campho phenique. If I must be confined to one preparation, I would select campho phenique."—*Dr. J. D. Pearce*.

IT is rumored that Dr. Knorr, of Germany, the discoverer of antipyrine, the great grip remedy, has made considerably over a million dollars by the winter's epidemic. The medicine sells at \$1.40 an ounce and Dr. Knorr gets a royalty of about sixty cents on every ounce sold. The demand everywhere was something tremendous. Five dollars per ounce was frequently paid for the drug, and it was often unattainable at any price during the height of the visitation. Here in New York, at Christmas time, one large wholesale drug firm had five hundred ounces; three days later they had not a grain left. The agent of the drug in this country was oversold 35,000 ounces the first of January; a vessel was due on the 15th, by which he expected a large consignment; but the demand abroad was as much in excess of normal as here, and the trifle of five hundred ounces was all the home house could send.

An Unushual Lesn in Simplifid Speling.

A JENTLMAN who iz now a milyonar, posted the folōing on the bilding now in kōrs ov ērekshun at 549 Brādwa Nū York :

"He who bilda, owns and wil occupy this marvel of brick, iron and granit, thirteen years ago walked the streets peniles and fifty thousand in det—only to prove that the capitalists of to-da wer poor men twenty years ago, and that many a fello facing poverty to-da ma be a capitalist a quarter of a century hence, if he wil. Pluck, adorned with ambition, bakt by honor, grit, wil, always command success even without the almyity dollar.

"CHARLES BROADWAY ROUSS."

A dispatch to the New York *Sun* is of interest to the church and the public: The Rev. J. W. Johnson, of the Methodist Episcopal church of Huntington, died to-day. On last Friday evening, in company with several other gentlemen, he was passing through the ceremonies of the Royal Arch degree in the Huntington Chapter of the Royal Arch Masons. In taking the degree it was necessary that he descend a vault thirteen feet deep by means of a rope tackle suspended from the ceiling above. He was the last to descend of the three taking the degree. After he had started to descend, the knot fastening the rope tackle to the lower end of the block slipped, and Mr. Johnson was precipitated to the bottom of the vault. He was taken out immediately, and medical aid summoned. He was not supposed to be seriously hurt, tho his injuries were painful. He was removed to his home, where he was attended by his brother Masons and friends till this morning, when he died.

We should rather have been killed in some other way.—ED. ITEMS.

The Ideal and the Practical.—It is related that at the dedication of the great Temple, which Solomon had built, a feast was given in honor of its completion. The king, noticing the iron-worker among the guests, asked, with a show of displeasure, "What dost *thou* here?" To which the iron-worker responded, "I understood the feast to be in honor of all who contributed to the building of the Temple." "But," replied the king, "thou didst no work on the Temple." "True," admitted the iron-worker, "but I made the tools with which all these men worked, and without which there could have been no progress."

The lesson of the story is that the forces of the mental and manual workshops of the world must, in the very nature of things, be mutually helpful—must be harmonious in their aims. The professional and industrial ideas must be pursued on the same plane of progress to the same goal of perfection.—*Cosmos*.

Sulphate or Sulphite?—Dr. Harned, on filling materials, makes some very serious blunders. Sulphuretted hydrogen does *not* form sulphate when in contact with silver, nor does it do so when in contact with copper; in both cases it forms sulphide, a very different substance. Sulphate of copper cannot form an impenetrable coating, simply because it is freely soluble. Whether sulphide of copper, which Dr. Harned evidently means, is a powerful germicide is not so easily settled by a statement. It is soluble with the greatest difficulty, and whether any substance so insoluble as this can be a germicide depends probably on its being good enough to eat in such quantities that the germs choke themselves with it.

THOS. FLETCHER, Eng.

Treatment of a Cold.—Dr. S. Wilson Hope, in the *British Medical Journal*, Nov II, 1889, says that twenty grains of salicylic acid, given in liq. ammon. acet. three or four times a day, will so far control a common cold that the aching of the brow, eyelids, etc., will cease in a few hours, while the sneezing and running from the nose will also abate, and will disappear in a few days, and, more fortunate still, the cold will pass off, and not finish up, as is customary, with a cough.

Japan has 40,321 licensed doctors.

Harvard medical students attend the cooking school.

Persons desiring to marry, in Brazil, must first pass a medical examination, to prove their fitness.

St. Clair and Pleasant Grove, Minnesota, advertise for physicians. The stringent law of the State is making the medical practitioner a scarce and desirable article.

Cohesive gold encourages a patient, careful habit; while soft gold leads one into a hurried and careless one.

Before setting crowns, wipe the gums around the root with a solution of perchloride of iron which will prevent weeping, and the most important part of the cement will be protected till crystallized.—*Dr. L. E. Custer.*

Experiment.—Take a pellet of properly mixed oxyphosphate cement, allow it to harden thoroughly, then immerse it in any fluid, acid or alkaline or combination of fluids or secretions *which are found in the mouth*, and see what the effect will be. We have been unable to see any loss of the cement after long and thorough trial.—*Western Dental Journal.*

In France the doctor's claim on the estate of a deceased patient has precedence of all others. Even the landlord's claims for arrears of rent must yield to the doctor's fee. The courts have decided that as it is an imperative right of humanity that the dying should have the necessary care and treatment, such attendance should be paid for before all other debts.—*Scientific American.*

EDITOR ITEMS:—I notice from February ITEMS that Dr. Howard extracted a first lower molar which had three roots. I have extracted one also that would rival an upper first molar. The third root was as distinct and perfectly formed as the other two.

G. T. PHILLIPS.

EDITOR ITEMS:—Should it be desired to remove teeth from rubber, either pin or pinless, saw the blocks off close, and put them in pure *nitric acid*. The rubber will be dissolved, and the teeth look new, and all trace of discoloration disappear from teeth or pins.

GENESE.

EDITOR ITEMS:—I have just read the "item" from Dr. C. W. Howard on the extraction of a lower molar with three roots. Bro. Howard is only twenty-two miles from me, but I shall go him *one better*. I enclose to you a lower molar with four roots, taken from a young Englishman's mouth. I have extracted teeth for different members of the same family, and never found a lower molar with less than three roots. The first one was sent to the *Cosmos* about fifteen years ago.

Mannsville, N. Y.

B. N. BAILEY.

Items of Interest.—This journal has entered on its twelfth volume with renewed evidence of its prosperity. It has been enlarged, appears in a new and attractive dress, with a beautiful and appropriate design on the title page. We extend to its able editor and founder our sincere congratulations for the phenomenal success the ITEMS has achieved in the field of dental journalism through his skilful management; and we congratulate its publishers because of the enterprise they have shown in the improvement named.—*Practical Dentist.*

I have no doubt but Dr. Howard's note on lower molar with three roots will elicit as many answers as Dr. Thatcher's long tooth; but I should like to be counted in. Not long ago I extracted three lower molars in one week, each with three distinct roots, and the next week, two superior bicuspid with three roots each. That is a little above my average, but I do not want your readers to think they can produce anything in "York state" that Nebraska does not grow. I had a superior third molar with five roots, but, thinking I would some day get one with six or more, I gave that away.

H. T. KING.

Dental Department, Vanderbilt University.

NASHVILLE, Tenn., March 1, 1890.

THE Annual Commencement of the Department of Dentistry in Vanderbilt University took place on the evening of the 25th, February, at Watkins Institute, before a large and appreciative audience. Valedictory on the part of the class by F. U. Meadows, of Louisiana; charge to the class by Prof. W. H. Morgan. The following gentlemen received the degree of D. D. S.

The number of students in attendance, 101.

GRADUATES.

F. U. Meadows, La.; J. W. Robson, Texas; Wm. F. Price, Va.; Jas. W. Jones, Ala.; Robt. M. Morrow, N. C.; Chas. H. Taylor, Tenn.; Earnest L. Hestle, Ala.; Crockett Campbell, La.; Jas. H. Downie, Mich.; E. J. Harrison, La.; W. C. Houston, N. C.; L. B. Torrence, Mo.; T. W. Smith, Texas; R. P. Anderson, N. C.; F. W. Smith, Mich.; C. N. Folse, La.; J. L. Howard, Cal.; J. W. Peden, Tenn.; J. E. Andrews, Ark.; C. S. Shields, Ala.; J. W. Combs, Texas; N. C. Lennard, Tenn.; A. P. Brown, Ala.; T. M. Stowers, Miss.; C. C. Hermann, Ind.; H. H. T. Segrest, Miss.; F. M. Gillespie, Ala.; J. C. Pearson, Ala.; D. F. Bently, N. Y.; W. D. Anderson, Miss.; J. L. Fox, N. Y.; Wm. H. Guess, Miss.; W. H. Stokes, Miss.; A. E. Frazier, N. C.; L. V. Hightower, Ala.; E. J. Tucker, N. C.; D. F. Robinson, Ala.; J. E. Dugger, La.; C. L. Gillespie, Tenn.; Arthur H. Douglas, Mich.; Frank C. Johnson, Tenn.

Central Dental Association of Northern New Jersey.

AT the annual meeting of this Association for election, etc., held at 943 Broad street, Newark, Feb. 20th, Dr. F. C. Barlow presented a resolution endorsing the action of the New Jersey State Dental Society, favoring the holding of an International Dental Congress in 1892, and that our society appoint a committee of five, in conjunction with committees from other societies, to meet at the Hoffman House, New York, Tuesday afternoon, April 8th, to formulate plans for the holding of the First International Dental Congress. The resolution was passed, and the following were appointed on this committee: Drs. F. C. Barlow, C. W. Hoblitzell, Harvey Iredell, W. P. Richards and S. S. Hawley.

Dr. C. A. Meeker presented a plan, providing that each State shall send twenty delegates to a general assembly, which shall elect a president, vice-president, secretary and treasurer; also an executive committee of fifty members, the latter to appoint sub-committees on finance, subscriptions, legislation, etc.

The following officers for the Central Dental Association were elected for the ensuing year: President, A. R. Eaton, Elizabeth; Vice-President, C. W. F. Hallbrook, Newark; Secretary, S. S. Hawley, Newark; Treasurer, C. A. Meeker, Newark. Executive offices: S. C. G. Watkins, C. S. Stockton, George E. Adams, F. B. Luckey and H. Lyman Clark.

S. S. HAWLEY, *Secretary*.

Meeting of the American Dental Association.

DR. T. B. WELCH:—The meeting of the American Dental Association, according to vote just taken, will be held at the usual time at Excelsior Springs. Railroad and other arrangements will be made as soon as possible. If those expecting to attend will notify the Chairman of Executive Committee of their intention, it will enable us to make our arrangements more definitely.

We hope a large enough muster will go by way of Chicago to warrant us in securing a special train to Excelsior Springs.

Further information will be furnished later. Yours truly,

J. N. CROUSE, *Chairman Ex. Com.*

Catching's Compendium of Practical Dentistry for 1890.

B. H. CATCHING, D. D. S.

A COMPILATION of all the practical matter of the current dental literature during the year, classified, indexed and bound in one volume. This will be a valuable book for the progressive, practical dentist—a ready reference book. To appear annually, first volume during January, 1891. Sold only on subscription, \$2.50 per volume.

All who know the author of this work will need no recommendation of the work from us. He has been such an indefatigable worker in the literature of the profession that we know that anything he undertakes will be well done. We shall look for this compendium with great interest.

A NEW organization has been formed among the dental students of the University of Pennsylvania, under the name of "The James Truman Dental Society." The first regular meeting was held on Thursday evening, March 13th, 1890, in the college building. The following officers were elected for the ensuing year: J. A. McKee, Jr., President; Louis Stephan, Vice-President; W. T. Arrington, Jr., Secretary; George J. Frey, Treasurer. This society standing in the same relation in its department as the D. Hayes Agnew, and still societies in the medical, hopes to fill a long-felt want, that of a closer and more congenial association between Professor and student. Besides opening for its members a field for free discussion and active investigation of all such subjects and questions that may be suggested in their course of study.

A Correction.

IN my article in March number of ITEMS: The price for electro-plating batteries should read \$1.50 to \$2.00 *per cell*, instead of for complete battery, and if the Smee is used, two cells of two quarts each make a good working battery. Do not buy a toy affair of some "cheap John" who advertises a complete outfit for fifty cents to two dollars. I cannot answer personally all the letters of inquiry that I receive asking for further instructions regarding electro-plating on steel, etc., but will make it the subject for a future article.

DR. WILLIAM H. STEELE,
Forest City, Iowa.

CALL FOR AN INTERNATIONAL DENTAL CONGRESS IN 1892.

In view of the fact that a World's Fair will in all probability be held in this country in 1892, it is deemed a wise thing that an International Dental Congress should be had at that time, and, as there has been some criticism made concerning the formation of the Dental Section of the International Medical Congress held in Washington, D. C., it is now proposed to formulate such a plan, that entire unanimity and interest may be had.

The following scheme is proposed, and to bring the subject to the attention of the profession.

At the 19th semi-annual meeting of the officers of the New Jersey State Dental Society held at Montclair, N. J., January 11th, 1890.

The following resolution was passed:

Deeming it fitting and the proper time for holding an "International Dental Congress," in the year 1892, the officers of the New Jersey State Dental Society have appointed a committee to act in co-operation with like committees from other dental societies throughout the United States. They would request all societies to appoint a committee to meet with them at the Hoffman House, New York, on Tuesday, April 8th, at 2 p. m., to formulate plans for the holding of the First International Dental Congress.

Trusting this will meet the approval of all the dental societies in the United States and that the executive powers of the same will appoint delegates at once,—

We remain respectfully, S. C. G. Watkins, *President*; Geo. E. Adams, *Vice-President*; Charles A. Meeker, *Secretary*; Geo. C. Brown, *Treasurer*; Fred A. Levy, G. Carlton Brown, E. M. Beesley, C. S. Stockton, C. W. F. Holbrook, B. F. Luckey, A. R. Eaton, James G. Palmer, Oscar Adelberg, Henry A. Hull, Worthington Pinney.

The following scheme will be submitted :

GENERAL.

Each State in the United States, through its societies, to send delegates, and be allowed twenty votes each.

The delegates assembled to elect from among their number a permanent President, Vice-President, Secretary, Treasurer and an *Executive Committee of Fifty Members*, to be divided in Sub-Committees of finance, subscriptions, essays, transportation accommodations, legislation and other committees necessary in the perfection of plans.

STATES.

Each State and Local Societies in the State, to appoint general State Committees, of as many members as may be needed, said State Committee to elect a working Executive Committee of twenty members *who* shall elect a President, Secretary and Treasurer, and said Committee shall canvass their respective States for subscription papers and exhibits, and they shall be the total number of delegates allowed each State in the general Congress Committee.

Societies who appoint delegates will please address the Temporary Secretary.

CHARLES A. MEEKER, D. D. S.,

29 Fulton St., Newark, N. J.

What Our Friends Say.

DR. R. G. CUNNINGHAM, Los Angeles, Cal. :

"It is too good food for a dentist to do without. Its absence causes constriction and inanition; in fact, its want is felt as well as its presence."

DR. GORTON NICHOLS, Chicago :

"I should dislike to be shut off from the ITEMS. I send you many good wishes for increasing success."

DR. D. V. BEACOCK, Brockville, Conn. :

"It is a very welcome monthly visitor."

DR. B. R. JACOBS, San Francisco :

"It is the most interesting of all the dental journals. It is concise, entertaining, and instructive. No dental office is complete without it."

DR. H. H. ELDRIDGE, Salt Lake City :

"It is just what its name implies."

DR. C. R. STRONG, Cleveland, O. :

"Thanks for the many golden thoughts of the ITEMS OF INTEREST."

DR. E. O. ARNOLD, Lockhart, Texas :

"I want the ITEMS as long as I practice dentistry."

DR. W. L. SMITH, Hawkinsville, Ga. :

"It affords me much pleasure to renew my subscription to your valuable journal. It is a welcome visitor. I appreciate your effort most heartily to make this one of the most useful and practical journals of the profession."

DR. W. W. MORGAN, Camden, N. J. :

"The friendship between the ITEMS and me has grown stronger each succeeding year, till we are now as inseparable as David and Jonathan."

DR. J. F. FORBY, Superior, Neb. :

"Can't keep house without it."

FOR OUR PATIENTS.

An Ancient Riddle.

ADAM, God made out of dust,
But thought it best to make me first ;
So I was made before the man,
To answer his most holy plan.

My body he now made complete,
But without arms or legs or feet ;
My ways are acts they could control,
But to my body gave no soul.

A living being I became,
And Adam gave to me a name ;
I from his presence then withdrew,
And more of Adam never knew.

I did my Maker's law obey,
Nor from it ever went astray ;
Thousands of miles I go in fear,
But seldom on this earth appear.

For purpose wise, which God can see,
He put a living soul in me ;
A soul from me my God would claim,
And took from me that soul again.

For when from me that soul now fled,
I was the same as when first made ;
And without hands or feet or soul
I travel on from pole to pole.

I labor hard by day and night,
To fallen man I give great light ;
Thousands of people, young and old,
Do by my death great light behold.

No right or wrong can I conceive,
The Scriptures I cannot believe ;
And, tho therein my name is found,
They are to me but empty sound.

No fear of death doth trouble me ;
Real happiness I ne'er shall see ;
To heaven I shall never go,
Nor to the grave, nor hell below.

Now, when these lines you closely read,
Go search your Bible with all speed ;
For that my name recorded there,
I honestly to you declare.

Who will give us the answer to this riddle?—ED. ITEMS.

The New Dentist

HE has just come out of college,
With his head crammed full of knowledge,
So he thinks! So he thinks!

He has come the world to alter,
In reform he'll never falter,
So he thinks! So he thinks!

And he'll banish all old fogies,
Just like a lot of bogies,
So he thinks! So he thinks!

In a few years he'll grow tired,
And won't act like one inspired,
So he won't! So he won't!

He will learn life's hard and dreary,
That the world ain't run by theory,
Yes he will! Yes he will!

He will then grow very prudent,
And he will laugh at the young student,
Yes he will! Yes he will!

And he'll say, I once was really
Very green and very mealy,
Sure's you live! Sure's you live!

At the Dentist's.

(From the Minneapolis Journal.)

MY bosom was the universe,
My soul the surging sea,
Whose roaring billows of content
Leaped heavenward with glee.
And far above their feathery foam,
Where stars with planets cope,
To brighten their celestial dome,
Gleamed thousand orbs of hope.

My heart swelled till it filled the space
Between the earth and sky,
Still one brief prayer could find no place
Within its walls to lie;
So on through the ethereal clime
My anthem prayers did flee,
Resounding 'tween the walls of time
And of eternity.

Then heaven was mine, and mine the world,
And mine the stars and sun;
And on through endless space were hurled
My planets, one by one.
The tempest shook his ruffled mane,
And charged down at my feet;
Grim Death arranged his funeral train,
Wound in his funeral sheet.

All powers above, and all below,
Save mine, then ceased to be,
And as I cleft with but one blow,
The earth from sea to sea—
The waters, from amazement, could
Not pass the smallest ledge,
And petrified the billows stood
Upon the ocean's edge.

The lightning was a harmless toy,
Too weak to singe a hair,
And all the thunders could destroy
No strain of music there.
My strength, alas! how quickly was
It won and lost! forsooth,
The laughing-gas gave out just as
The dentist pulled my tooth.

All About an Aching Tooth.

A DUDE, accompanied by his mother, a fashionably-dressed lady, called on a New York dentist to have an aching tooth extracted.

"Now," said the mother, addressing the dentist, "I want you to take out a tooth for George; and you will be as easy as you can about it, won't you? The dear boy is exceedingly weak for want of sleep—he did not close his eyes after six o'clock this morning—and I know he is feeling dreadful."

The "dear boy," I would observe parenthetically, looked about twenty-two years old, was tall, slender, had a small round head which rested on a long thin neck ensconced in a snowy-white, glossy collar, reaching almost up to his ears. An eye-glass covered one of his optics, to which was attached a thin gold chain that was secured to a button-hole in his vest. He wore a massive gold watch-chain, with dependent trinkets, and his dress was that of the conventional dude. There were several lonesome hairs on his upper lip, indicating that George was trying to raise a moustache, with powerful odds against him.

The dentist, after looking critically at the "What is it" before him, answering to the name of George, informed its mother, with a pleasant smile, that he would do the best he could for George, who, after being seated in the dental chair, said:

"Do you think, dwentist, that it will hurt much to extwact that blawsted tooth? I am awfully weak, and powositively it is an outwage to have such pwain."

"You must excuse the dear boy," interrupted his mother, "he is very much excited now, and hardly knows what he is talking about," (softly) "He is highly educated and polished, I'll assure you, but pain seems to have unsettled his mind, dear child."

"When a fellah cwant eat or sleep on account of a pwoking tooth, gwacious heavens! it's an outwage that will make anyone excwited," said George.

"Well, well, my dear sir," whispered the dentist, "be a brave man and get rid of the trouble."

"You will be very, very easy, won't you, dentist?" said the mother with an anxious look.

"Cwant you take it out, dwentist, without those blwasted things?" he asked, pointing to the forceps the doctor held in his hand, "they powositively make me feel fwaint and like womiking."

"George is exceedingly weak," the mother repeated, feelingly, "he only ate half a roasted oyster for his dinner, the dear sufferer."

"I ain't eat a good square meal since last night," said George, "and then the old woman made the cwook prepware me a woasted quail and some dry twoast."

"And he has just finished such a lovely piece for publication," exclaimed the mother, enthusiastically. "I wish you could read it, dentist; it is charming, I'll assure you."

"What is it entitled," asked the dentist with pardonable curiosity and commendable patience.

"Moonwite on the Sea Shore with the Gwirl I Left Behind Me," George answered proudly, while the mother looked complaisantly on her son, "and," he added, "it is the pwettiest and most gwaceful thing I ever wrote."

"Not considered so by the girl who got left, I presume," said the doctor with a good-natured laugh.

"George must bring you the composition—you will, won't you, darling?" she said, all aglow with good nature.

"If this blwasted tooth don't pwain any more," George answered.

"That you may have no fears on that score," said the dentist, "let me take it out at once."

"It dwont ache a bit now," said George, with a cheerful countenance, "but if it ever does again, I will wush right here and have you awest its pwogwess."

"You are a dear child," said the mother, taking George by the hand and helping him out of the chair. "Don't you think, dentist," she continued, "I ought to feel proud of my boy? As he says, if that naughty tooth troubles him again he will call on you directly;" saying which, the two took their departure.

The Proximal Surfaces of the Front Teeth.

DR. SANFORD G. PERRY, PA.
Odontological Society.

ALMOST invariably I fill them from the lingual side. Undoubtedly the Arthur separations can be made on the under surfaces of these teeth to greater advantage than between any other teeth in the mouth; but I do not like to weaken the under plate of enamel, and I generally cut through it with only a channel the width of the diameter of the cavity. This lays the cavity open so completely that it can be prepared and filled easily and accurately. I never sacrifice any of the enamel on the labial side. Nothing is more painful to me than to see the gold from that side.

In proximal surfaces of the temporary teeth, I endeavor to follow the general plan here described; except that with the front teeth I make free spaces up to the gum. I do this with these teeth sometimes in anticipation of decay. I have never filled a temporary tooth with gold since I have been in practice.

The back teeth I fill with amalgam, being careful on the proximal surfaces to preserve their shapes, so that the little tots can eat and grow in comfort, unconscious of the possibilities of dentistry.

In operating on the proximal surfaces of any of the teeth, light and illumination is of the first importance. I have devised an attachment to the operating chair for holding a condensing lens, which on dark days I find of the greatest value. I also use it for concentrating gaslight at night. The lens is four inches in diameter, and of about twelve inches focus. I have had the good fortune to find at an optician's small concave, reflecting mirrors, two inches in diameter, and of about three-inch focus, that, in connection with the S. S. White "Jumbo" glass, have proven to be a valuable acquisition. After becoming accustomed to these, I should not be willing to go back to the ordinary means of illumination.

I am not willing to leave the subject of the proximal surfaces of the bicuspids and molars without calling attention to several important points I think are often overlooked. In restoring the contour of badly decayed teeth, or those that have been badly cut away, I have many times endeavored to save work and compromise by disregarding strict contour and have built out an abutment, that, touching the center of the adjoining tooth at a single point should hold the teeth in position and protect the gum. Such a form of filling holds the teeth in position, but it does not always protect the gum. Unless the filling is bulged the whole width of the tooth, and rests against the adjoining tooth by a broad surface, the festoons of the gums will be exposed and kept in an irritated and disturbed condition by the impact of food.

Another error is that of building the filling rather scant from the gum to near the grinding surface, and then making a rather sudden swell of the filling to secure the point of contact. This leaves an ugly space between the tooth above the point of contact, which catches food and causes annoyance.

So that at last it comes to be seen that to get the best result we must follow the natural outline of the tooth in each particular case. Each mouth has its own pattern that must be regarded and accepted as the true guide in shaping the fillings.

All that has been said could have been put in the single sentence, "Get free edges, if possible, for your proximal filling, and shape them to the original outline of the tooth."

"Throw physic to the dogs," he said.
She did. Next day the dogs were dead.
—*Washington Star*

Editorial.

Have We an Established Standard for Spelling?

BY the way some writers talk, it would be inferred we had ; but, really, there are over two thousand words spelt variously, not only by common writers, but by the dictionaries.

We have good authority for connexion, deflexion, inflexion, and reflexion ; so we have for connection, deflection, inflection, and reflection. We shall be backed up by "authority" if we write defence, expence, offence, practice, and pretence ; and we have just as much "authority" for defense, expense, offense, practise, and pretense. "You pay your monish and take your choice." Shall we write drought or drouth, height or hight ? That depends on what dictionary we follow. Shall it be addible or addable, conversable or conversible, inferrable or inferrible, referrible or referable ? If you have half a dozen dictionaries, you will be astonished at the latitude they give you. In like manner you will find you have your choice between such spellings as e and i in enquire, enclose, ensure, etc., and inquire, inclose, insure, etc. So some lexicographers will tell you to spell center, meter, theater, etc., while others will persist in centre, metre, theatre, etc. In such words as bromide, chloride, iodine, sulphide, tho the i in all these words is short, few writers dare to leave off the terminal e. Some of our standard writers, however, write glycerin, oxid, tanisin, etc. Shall we write criticize, civilize, naturalize, patronize, etc., or criticise, civilise, naturalise, patronise, etc. ? And shall we spell mould, moult, mouldy, moulding, guild, gilding, guilder, or shall we conform to the custom in other words, such as colt, gold, and bolter, and write mold, molt, moldy, molder, gild, gilding, and gilder ?

The fact is, our spelling is variable, miserable and unnecessarily difficult, confusing and expensive. Take the following words of variable spelling, and see if we have a standard rule for spelling, and if our heterogenous spelling does not need revising. Each of the following spellings has its "authority," and yet how we are left in confusion in spelling them, unless we decide to take some one dictionary as our guide, and exclude all others, and even then we have at least five hundred words spelt differently by the same author. There are more than a thousand words that have no fixt spelling ; some put it at two thousand.

Alleluia, halleluiah, allelujah, halleluiah.	Bousy, boozy.
Ambassador, embassador, ambassadour, embassadour.	Buccaneer, bucanier.
Asafetida, asafetida, assafoetida.	Buddhism, boodhism.
Ax, axe.	Bun, bunn.
Adz, adze.	Bur, burr.
Ay, aye.	But (a hinge), butt.
By and by, by and bye, bye and bye.	Broadax, broadaxe.
Balister, ballister.	Brocage, brokage.
Bandana, bandanna.	Bronchi, bronchia, bronchiae.
Base (music), bass.	Cag, keg.
Baseviol, bassviol.	Caique, caic.
Battledoor, battledore.	Calk, calque.
Bazar, bazaar.	Cannoneer, cannonier.
Braman, bramin.	Cantaloup, cantaloupe.
Benedick, benedict.	Cantalever, cantilever.
Blouse, blowse.	Caravansary, caravansera.
Bombazet, bombazette.	Cassimere, kersaymere.
Bombazine, bombasine.	Catchup, ketchup, catsup.
Bourgeois, burgeois.	Catechise, catechize.
	Ceroon, seroon.

Chant, chaunt.
 Check, cheque.
 Clarionet, clarinet.
 Clew, clue.
 Coeliac, celiac.
 Comb, combe, coombe.
 Controller, comptroller.
 Copaiva, copaiba.
 Cot (a hut), cote.
 Cott (a bed), cot.
 Cotillion, cotilion.
 Councilor, councillor.
 Counselor, counsellor.
 Coneiform, cuniform.
 Creasote, creosote.
 Critic, critique.
 Cutlass, cutlas.
 Cyclopedia, cyclopaedia.
 Dolphin, dolphine.
 Diaeresis, dieresis.
 Diarrhea, diarrhoea.
 Diarrhetic, diarrhoetic.
 Disk, disc.
 Distention, distension.
 Distill, distil.
 Doctress, doctereess.
 Dolor, dolour.
 Dory, doree, dorey.
 Dribblet, driblet.
 Edematous, oedematous.
 Embosom, imbosom.
 Emerods, emeroids, emrods.
 Emir, Emeer.
 Envelop, envelope.
 Epaulet, epaulette.
 Equivoque, equivoke.
 Estafet, estafette.
 Esthetic, aesthetic.
 Etiology, aetiology.
 Eyrie, eyry.
 Fakir, faquar.
 Feldspar, feldspath.
 Fillibeg, phillibeg.
 Filligree, fillagree.
 Foundery, foundry.
 Frieze (in architect), frize, freese.
 Fulfil, fulfill.
 Fulfilled, fulfilled.
 Fulfilling, fulfilling.
 Fulfilment, fulfillment.
 Fusileer, fusilier.
 Garish, gairish.
 Gantlet, gauntlet.
 Galt, gault.
 Girt, girth.

Good-by, good-bye.
 Gormand, gourmand.
 Gram, gramme.
 Guaranty, guarantee.
 Hackle, hatchel, heckle, hetchel.
 Hallo, halloo, hollo, holloa.
 Hight, height.
 Highten, heighten.
 Hindrance, hinderance.
 Hindoo, hindu.
 Hodge-podge, hotch-potch.
 Hooping-cough, whooping-cough.
 Hurra, hurrah.
 Jettee, jetty.
 Jostle, jostle.
 Jupon, jupon.
 Kilogram, kilogramme.
 Koran, alcoran, alkoran.
 Lambdoidal, lamdoidal.
 Liter, litre.
 Louver, louvre, loover.
 Lustring, lutestring.
 Ley, lye.
 Mamaluke, mameluke.
 Maneuver, manoeuvre.
 Marquess, marquis.
 Matrice, matrix.
 Mattress, matrass, matress.
 Mixt, mixed.
 Mohawk, mohock.
 Moneyed, monied.
 Mortgageor, mortgager, mortgagor.
 Mosquito, musketo, musquito.
 Mustache, mostache.
 Nobless, noblesse.
 Nomads, nomades.
 Offense, offence.
 Orach, orache.
 Oriflamb, oriflamme.
 Osprey, ospray.
 Otolite, otolith, otolitte.
 Ottar (of roses), otto, attar.
 Oxid, oxide, oxyde, oxyd.
 Palet (shovel), palette.
 Papoose, pappoose.
 Parquet, parquette.
 Phial, vial.
 Pincers, pinchers.
 Plow, plough.
 Ponton, pontoon.
 Porteress, portress.
 Prunella, prunello.
 Quintet, quintette, quintett.
 Raccoon, racoon, rackoon.
 Rennet, runnet.

Resin, rosin.	Sumac, sumach, shumac.
Reverie, revery.	Swap, swop.
Ribbon, riband, ribband.	Swath, swathe.
Ruble, rouble.	Swab, swob.
Sandarac, sandarach.	Swabber, swobber.
Sanskrit, sanscrit.	Thrash, thresh.
Sarcenet, sarsenet.	Ton, tun.
Sauer-kraut, sour-crout.	Tonnage, tunnage.
Scion, sion.	Tranquilize, tranquillize.
Sepawn, supawn, sepon.	Trousers, trowsers.
Shellac, sheellac.	Trumbrel, trumbril.
Sheriff, cherif, scherif, sheriffe.	Vender, vendor.
Silicious, siliceous.	Verdegris, verdigris.
Sillabub, syllabub.	Vise (an instrument), vice.
Simoom, simoon.	Visiter, visitor.
Siphon, syphon.	Warranter, warrantor.
Sirloin, surloin.	Whippoorwill, whippowill, whipperwill.
Sirup, syrup.	Whisky, whiskey.
Solder, soder.	Wilful, willful.
Sorel, sorrel.	Windlass, windlas.
Spinach, spinage.	Wintry, wintery.
Spiritous, spirituous.	Withe (a stick), with.
Spirt, spurt.	Woe, wo.
Sponk, spunk.	Woful, woeful.
Stanch, staunch.	Woolen, woollen.
Strop, strap.	Yelk, yolk.

The Tissues of the Teeth.

THE membrane, or tissue, called *cement*, lines the pulp cavity; and, folding over like a double cap, covers the roots and neck. It is of very low vitality; yet it is such a closely connecting link as a cement between living substances, and acting as their covering, and entering into them as a bond, that it is very useful. It is the very substance without which the dentine and enamel would be reduced to disorganized minerals. The enamel, for instance, is said to be 90 per cent phosphate of lime, with less than 5 per cent organized substance. What is that organized substance? It is this cement. It is this substance that binds and organizes the lime into a dense, strong, vitalized, durable and wonderfully resisting tissue.

How apt we are to think of the dentine as a solid substance; yet, if we scrutinize it closely, we find it is made up of a multitude of tubes, filled with liquid. The shell of these tubes are so closely bound together, that in splitting a tooth we never separate these tubes, but split them open. Yet they are so numerous, and their walls are so thin, that there is more space than solid substance.

We speak of these tubes being filled with nerves; yet it is so emphatically a fluid, that these tubes carrying it are called canals, and here and there are reservoirs. But this fluid is so vital, or at any rate it is such a delicately sensitive substance, that it acts the part of thousands of nerves, carrying sensation to the pulp and vitality to the tooth.

But you say this fluid has no life, because it has no feeling. Has a nerve feeling? The popular belief is that it is the most highly sensitive substance in the body; but it is not. You may cut a nerve asunder without much sensation. Place your finger on the trunk of a freshly exposed nerve, and, unless it is in an abnormal condition, it gives little response. A nerve protruding from a broken tooth is not sensitive ordinarily till inflammation sets in.

A nerve is only the medium of sensation. Prick the skin, and you say it hurts, because you have penetrated a nerve. No, not because you have *penetrated* a

nerve, but because you have touched the extremity, or open mouth of one. They are everywhere throughout the skin, and pressure on them is the only source of pleasure or pain; and tho the *seat* of sensation seems to be here, it is in the brain.

So with the fluid in the tubes or canals of the dentine. It is not sensitive, but only serves to conduct sensation to the pulp; and the idea of a sensitive tooth or a sensitive muscle is only conventional; the only seat of sensation is in the brain. This fluid must possess a species of vitality in a degree similar to nerves, for it is capable of irritation and swelling, which we name congestion and inflammation of the tooth substances.

The enamel is somewhat similar to the dentine. We find no tubes in it, and but few vacuums. It is composed of prisms, regular columns of stately crystals that fairly sparkle as the light is thrown on them. But if we look closely we shall find these prisms are tubes flattened, and not so completely solid as to be without fluid. The very glistening in the sunlight is caused by confined water, and these breaks, or "faults," as we would call them in geology, are but empty reservoirs.

It is common to distinguish dentine from enamel by saying the latter has no sensation; but it has, tho not so much as the dentine, and it has this mysterious fluid we spoke of in dentine, running all through it, but always in the direction of the pulp, as with the dentine, carrying sensation and keeping up vitality. We do not mean to say enamel and dentine are alike, or that they are primarily the same tissue, but that there is a resemblance. Tho they do not originate in the same membrane. This enamel has grown on to the dentine as a hood, to give greater resistance to disintegration, disease, violence and use. Yet it has a direct and vital connection with the dentine, and transmits sensation to the pulp.

We say the tooth is thus composed of three tissues—the cement, the dentine, and the enamel. But, of course, we must recognize the pulp as a part of the tooth. It is that from which these three hard tissues come, and it constitutes the source of their constant supply. It is hard to describe. It is composed of such a multitude of nerves, arteries and veins, and capable, when excited, of such extreme sensations and changes, so thoroughly involving the whole tooth, that it is often called the nerve of the tooth. Its normal appearance is hardly more than jelly. It can be pressed and even cut without hardly a sensation or a resistance. So that the most painless manner of killing it, when in a healthy, freshly exposed condition, is a light tap on a sharp stick to penetrate its substance. Yet, when irritated, it is the most sensitive of all tissues, and the most painful. In a state of health no blood-vessels or nerves are seen in the pulp; but when congested or inflamed, it appears to be little else than a close network of these vessels, and piercing it during this condition produces palpitation and profuse bleeding, the blood sometimes spurting out at every pulsation of the heart.

But with the consideration of the cement, dentine, enamel and pulp, we are hardly through the tissues of the tooth. It has an important membrane not often mentioned even by histologists, physiologists or anatomists, and yet recognized by one of the oldest writers in the world's history. How is it corrosive acid on a tooth, or even excessive brushing or scraping, makes it look dull? What gives the tooth, in its normal condition, its beautiful luster, hardness and resistance to wear? It takes a very sharp instrument of extremely fine steel and temper to cut through the surface of a healthy tooth. There is evidently something there before we get to the enamel. Job says (Job xix, 20) the tooth has a skin; and this is the best name to give the very thin, transparent covering. It can be peeled off like a skin, and it performs the general purposes of one. It is to the enamel of the crown what the skin of cement is to the root.

The pericement is so closely associated with the tooth, it should be mentioned in this connection. It is sometimes said to be the lining of the walls of the socket of the tooth—the alveolar process; sometimes it is spoken of as an extra covering of the roots of the tooth. It seems to be both. It is that spongy, somewhat soft

membrane, separating the one from the other, and nourishing both. Its congestion or its inflammation produces exquisite pain, and its swelling actually loosens and slightly lifts the inclosed tooth from its socket, so that "this tooth seems a little longer than the others."

A tooth that resists all safe efforts at extraction, will yield without great effort the next day. This is brought about by this pericement being inflamed and partially broken down by the previous day's violence.

How is Food Transformed into Living Tissue?—V

FOOD is made soluble by being prepared by the mouth and peptonized. When mixed with and changed by bile and the pancreatic juice into a substance prepared for vitalization, it is drawn through the delicate villa of the intestine, and is then *liquified* food; then, by the peculiar changes produced by passing through the mesenteric and lymphatic glands, it becomes *vitalized* food; now by passing into the portal system it becomes *crude blood plasma*; by ascents into the lungs and organized, purified, and vitalized, and it becomes *nasant blood plasma*.

This is the way bread is made flesh, and flesh is made a thing of beauty and given a life of action. How the food we eat can, in a few hours, walk and talk, we can not tell. No wonder the great Psalmist exclaims: "We are fearfully and wonderfully made."

If we examine the strong muscle, we find it is made of only beads of molecules, so slender that a touch dissolves them; if we look into the solid bones we see little else than a quantity of lime held together by a sort of glue; if we hold up to view a nerve we find it a mere thread of soft plasma. The secret of its wonderful life and action is entirely hidden. The brain is but bundles of threads, and these threads so frail they cannot be unraveled without breaking down into a mass of conglomerate paste. Each of these substances, and each of the other structures of the body are of perfect weakness, yet of wonderful strength; they are, in their ultimate simplicity, nothing to be desired; but in their organized complexity they are marvels of order, harmony and power. Is it not wonderful that the supper of to-night is the man of the morning? That the blood of this morning is the strong arm of this evening? That the phosphorus of to-day is the instrument of thought to-morrow?

In a sense, and in a small degree, we have answered our question: "How is food transformed into living tissue?" But how meager the answer! How limited are the knowledge and investigations of the most learned!

The Names of the Surfaces of Teeth.

"OPPOSING" teeth is a wrong term to signify their occlusion. The surface of a tooth of one jaw that comes in contact with the surface of one of the other jaw is not in *opposition*, but apposition. Such surface is apposite—*adapted*—to the other.

The aspects, or presentation of surfaces, of individual teeth are: *labial* or lip, *buccal* or cheek, *lingual* or tongue, and *palatal* or palate (the roof of the mouth). A more simple division, and one that would represent all of these, would be the *outer* and the *inner* surfaces. The word *aspect* is what in rhetoric we would call far-fetched. Its real meaning is not the name or relation of a surface of a thing, but its intrinsic look, countenance or mien; how the thing appears to the eye. The *surfaces* of the teeth, as in our caption, is much better. These Latin terms are also unnecessary.

Then we have the proximal, mesial, distal, anterior and posterior surfaces, and the cutting edge. Some use *approximal* for *proximal*. This is wrong. Approximal means to carry or advance, to cause to approach,—a meaning we do not intend; but proximal means next to; nearest in position; immediately facing. For *mesial* or middle, *distal* or distant from, *anterior* or front, and *posterior* or back, we might well substitute the two simple terms *front* and *back*, not only as the names of surfaces of individual teeth, but also to designate the incisor and cuspid teeth as

front teeth and the bicuspid and molars as back teeth.

"The cutting edge" is improved on by the term occluding surface. None but the front teeth have a cutting edge, but all the teeth have occluding surfaces.

The Names of the Teeth.

IT is a pity there is not uniformity in these names.

Let us call the baby teeth *temporary*; it is significant and easily remembered. Few who use the word deciduous know what the term means. And its meaning does not accurately apply to the character of the teeth; for it means "the falling out teeth." At best, only a portion of each falls out; the rest is dissolved or absorbed. Some call them "the first teeth;" but this is not sufficiently characteristic, for twelve of the permanent teeth are first teeth. Neither is "milk teeth" appropriate.

Let us call the second set, the *permanent* teeth, in contradistinction from the temporary. Why not uniformly call the distinctive names of the permanent teeth: central and lateral incisors, cuspids, 1st and 2d bicuspid, and 1st, 2d and 3d molars? These names are plain and significant. Incisor means cutting, cuspid means a tooth with a cusp or point, bicuspid means two cusps, and molar signifies bruiser or crusher. Let us ignore the many others terms employed, as tending to confusion. There are "the teeth of prehension," "the posterior teeth," "the anterior teeth," "the medial teeth," "the buccal teeth," "the cheek teeth." Why not let such terms quietly pass away? and they will if we do not use them. Also, let us ignore "eye" and "stomach" teeth, the "dog" or "canine" teeth, the "pre-molars," the "six year," or "sixth year," molars, and the "wisdom" teeth, which are sometimes called by that awful, jaw-breaking name, "*dens sapientiae*."

There was a time when the terms superior and inferior meant upper and lower; now they do not refer to position, but quality. So let us not call the upper teeth superior, nor the lower teeth inferior, but simply upper and lower.

Live in your own House.

TOO many dentists pay rent, and even then live inconveniently, who, with forethought and economy, might live in their own house.

When we went to the West, thirty years ago, my wife said:

"Now, husband, let us have a house of our own, if it is only two boards stuck up on end."

After paying out enough in rent to buy two good houses, I took her advice, and built, tho it was not "two boards stuck up on end."

Do not say it is impossible. Plan for it now, work for it continually, save for it persistently and you will be astonished to see how the impossible vanishes.

We all spend too much for superfluities, for luxuries, and for simply "to keep up appearances;" and when there is not some consuming purpose to save for, we are less thoughtful, less industrious, and less ambitious, as well as less economical. It is often the making of a young man to have a sweetheart; and it is the making of a married man to concentrate all his energies on having a home of his own.

Lower Molars with Three Roots.—We have received notes from several dentists mentioning that such teeth have come under their observation. It will hardly do to publish these letters in full, tho such teeth are unusual.

We still get letters on the woman question, or rather on women in the dental profession. All of them are in advocacy of their admission. Perhaps we have published enough of them, tho some of these communications are of a high order.

Why use the term *cementum* and *pericementum*? Must we Latinize everything? Are not cement and pericement just as good?

Prof. Truman W. Brophy, M.D., D.D.S.

SEE FRONTISPICEE.

PROF. BROPHY, whose portrait we make our frontispiece this month, is Dean and Prof. of Oral Surgery of the Chicago College of Dental Surgery, and has been since its organization in 1883. Tho only 42 years of age, he has had many honors, and has pursued a course of studies for variety, thoroughness and length, equalled by few. He is probably one of the foremost experts and specialists of our day. He graduated in the Pennsylvania College of Dental Surgery in 1872, and in Rush Medical College, after a three years' course, in 1880, where he was retained as Professor of Dental Pathology and Surgery, which chair he still holds, tho at the head of the Chicago College of Dental Surgery.

The Chicago College of Dental Surgery.

THIS College had its birth in 1882, and has had uninterrupted prosperity. Two hundred and forty-five graduated at its last session. This is unprecedented for a comparatively new college. From all we can hear, its courses have been as thorough as popular. No doubt this is largely due to the indefatigable labors of the intelligent, practical and popular Dean, Prof. Brophy.

Prof. Brophy says :

At its origin it was a post-graduate school, known under the name of the Collegiate Department of the Chicago Dental Infirmary. Its students were first required to obtain the degree of Doctor of Medicine, or its equivalent, from some college recognized by the Illinois State Board of Health, and to take two courses of its lectures with us, before receiving the degree of Doctor of Dental Surgery.

But he says :

While a knowledge of the underlying principles of medicine is indispensable to the dentist, he must always study to appropriate these principles to his use as a dentist. A change came. The Board of Directors experienced what our learned pathologist, Prof. Black, would scientifically term a "remoleculization" of ideas. In the beginning it was medicine *first* and practical dentistry *afterward*. Now, as the politicians would say, it is practical dentistry *first, last, and all the time*, accompanied by the teaching of anatomy, chemistry, and physiology, and the principles of medicine and surgery, thereby presenting to the student's mind those branches of knowledge which we regard essential to a well-informed practitioner of dental and oral surgery.

Do Cattle Have Upper Teeth? It is strange how ignorant we mortals are of beings below us. Some time since a young man called my attention to this, as my cow was grazing in my yard.

"That cow," said he, "bites off the grass with an uplift of the head, as tho she had no upper teeth; I wonder if they are all gone?"

"O, no!" said I, "she is a young cow."

"I'll bet three cents," said he, "she hasn't a tooth left to bite with in her upper jaw."

"Well, I will take the bet, but you will have to do the examining; for I should look small, looking into the mouth of a young cow for a toothless jaw."

He looked, and to his triumph found his statement true.

Now I had been taught that for fifty years, and yet did not know it. That is, I had been taught that all ruminants were without these teeth, specially without upper front teeth. I knew the cow was a ruminant, and yet I had never applied that knowledge so specifically as to know my cow was destitute of those teeth.

O, for more clear, specific, practical application of what we know theoretically.

The spinal cord hangs loose in the vertebral canal, floating, as it were, in the cerebro-spinal fluid; it only extends as far as the second or third lumbar vertebra, and there enters the centralligament.

Learn Thoroughly Something, but Something of Many Things.

IPITY a man with a vocation without an avocation. Even if he has excellent wisdom and skill in his specialty, he is to be commiserated, tho successful, unless he has some side show where he can relax the strings of his high, strong instrument, and enjoy diversion. To shut himself up within himself and his calling makes him little else than a beast of burden in a tread-mill, with all this beautiful world shut out. By all means have some side show, some pleasant avocation that shall force the mind and the spirits, the time and the energies, and even the muscles, from ordinary, heavy, absorbing labor to lighter and different employment. This is restful, beneficial and often profitable.

For twenty years we were a nervous, hyper-sensitive, unhappy dyspeptic. We cannot remember, even in our youth, when we were not "out of order." When about thirty-five years old, yes, "old" in the worst sense of that term, we thoroughly waked up to the necessity of curing ourself, for doctors said we were incurable. We did it largely,

1st. By working pleasantly in our dental office eight hours a day; in fact, doing *every* thing pleasantly, instead of twelve, working heavily and hurried, as in a tread-mill; and being, when out of office, out of dentistry *entirely*.

2d. By having something to do other than dentistry, that pleased us, and diverted our attention from the day's business and perplexities.

3d. By devoting two hours a day to mental improvement, besides what gave me abundant exercise and diversion. By this, I obtained a superficial knowledge of many sciences and arts, of travels and histories, little mechanisms and inventions, which gave me a greater relish for dentistry.

Thus, during the last thirty years, I have lived a much healthier, happier, and more useful life than before, and done better and more profitable work in my office, till I graduated from it.

The Model Dental Office.

THE illustration of the dental office in our title page suggests to Dr. J. A. Robinson of Morrisville, Vt., the idea of our publishing a few plans and specifications for a suit of rooms for a dental office—not perhaps so elaborate as this one of Dr. Bonwill's, nor one going into the details of furniture etc.,—but plans within the reach of most dentists, and perhaps a few of a higher order.

Let us see what our skilful thinkers, planners and workers will give us.

Our Dental Office, given on our title page, is not ours, as is assumed by the *Western Dental Journal*, but Dr. Bonwill's. It is probably one of the best appointed offices in Philadelphia. As the *ITEMS OF INTEREST* is specially in the interests of dentists, it was thought no more appropriate design for our title page could be given than the dentist's surroundings while at his work.

Brethren, we are identified with you in your laudable work. It is our constant aim to come into your offices every month as your familiar friend, to chat with you familiarly and interest you in everything interesting to you; and if you will let us talk to your patients and their attendants while they are waiting in your reception-room, we will do them good.

THEY talk about a woman's sphere
 As tho it had a limit;
 There's not a place in earth or heaven,
 There's not a task to mankind given,
 There's not a blessing or a woe,
 There's not a whisper, yes or no,
 There's not a life, or death, or birth
 That has a feather's weight of worth,
 Without a woman in it.

—Kate Field's Washington.

Miscellaneous.

Chilblains.

BY DR. ROBERT MCBRIDE.

℞ Lin. belladonnæ (Br. ph.).....	5 2.
Lin. aconiti (Br. ph.).....	5 1.
Acid carbol.	℥ 6.
Collodii flex. ad.....	5 1. M.

Sig.—To apply with a camel's hair pencil every night to the parts affected.

DR. G. E. GREEN has found the following application a useful one, even when chilblains are broken.

℞ Olei ricini,	
Olei terebinth,	
Collodii flex.....	3 3 4 M.

Sig.—To be used twice daily.

DR. B. NICHOLS speaks very highly of the following:

℞ Spir. camphor.....	5 2.
Tr. opii.....	5 2.
Acid carbol.....	grs. 40.
Alcohol.....	5 4.
Aqua.....	5 4.

If the skin is broken, this lotion may be diluted with water, and applied on lint or with a soft rag.

Another writer states that, if the chilblains are painted with equal parts of compound tincture of iodine and collodion, three or four times, considerable benefit will follow. He has never known this treatment to fail since he first tried it some ten years since.

The Longevity of Birds.

THE swan is the longest-lived bird, and it is asserted that it has reached the age of three hundred years. Knauer, in his work entitled "Naturhistoriker," states that he has seen a falcon that was 162 years old. The following examples are cited as to the longevity of the eagle and vulture: A sea eagle captured in 1715, and already several years of age, died 104 years afterward, in 1819; a white-headed vulture, captured in 1706, died in 1826, in one of the aviaries of Schoenbrunn castle, near Vienna, where it had passed 118 years in captivity.

Parroquets and ravens reach an age of over one hundred years. The life of sea and marsh birds sometimes equals that of several generations. Like many other birds, magpies live to be very old in a state of freedom, but do not reach over 20 or 25 years in captivity. The domestic cock lives from 15 to 20 years, and the pigeon about 10. The nightingale lives but 10 years in captivity, and the blackbird 15. Canary birds reach an age of from 12 to 15 years in a cage, but those flying at liberty in their native islands reach a much more advanced age.

Longevity of Elephants.

THE journals of Ceylon have recently mentioned the death of an elephant that was well known on the island and had been seen by several generations of Englishmen. He was called Sello, and had belonged to the last of the kings of Kandy. He was one of the hundred elephants that were taken by the English government in 1815, when the Kandyan dynasty was overthrown. At this epoch, the elephant was said to be fifteen years old. If this is correct, he died a natural death at the age of eighty-nine years.

How a Spider Stretches His Web across a Street.

To the Editor of the Scientific American:

Your correspondent, T. S. K. (1608), asks "How does a spider get his web stretched from one side of a street to the other?" He takes an elevated position, spins his web, collects it into an irregular mass for his air ship, now fastens his web to the place he is about to leave, weighs anchor, and the wind carries the workman to a new *terra firma*.

Before the days came to me to earn my own bread (while on the farm), I found great pleasure in watching the many little workmen.

North Topeka, Kan.

DR. J. F. BUCK.

In Gresham's lectures on influenza, he noted the fact that day laborers appeared to have an immunity against the disease, as compared to those who are paid by the week or month. The cause is not far to seek.

Removing Warts.

To the Editor of the *Scientific American*:

In your issue of December 7, F. B. asks, in queries and answers, how to remove a wart from an eyelid without injury to the eye. I may tell you how I did it successfully some years ago, viz.: simply by taking a clear piece of thick clean blotting paper, making a hole in it just large enough to fit snugly around the wart, allowing the wart to pass through the hole of the blotter, then by using a small clean stick of wood about the size of a match and dipping it into a bottle of Squibb's No. 1 impure carbolic acid, not diluted, and touching the top of the wart with the stick, holding a very small drop or particle of the acid, the blotter absorbing the surplus acid, and preventing injury to the eye or skin outside of the wart; then removing the blotter, the acid causing the wart to turn to a whitish hue, and in a few days to disappear forever. One or two touches of the acid at the first application were sufficient for a small wart. I have removed other warts quite successfully by a similar process.

Summit, N. J.

E. T.

[An operation of this delicacy ought only to be tried, however, by a physician or optical expert.—ED.]

Dryness of the Throat.

DR. SOLIS COHEN, in the *Med. News*, recommends the following ingredients in the form of a lozenge, to be dissolved gradually in the mouth:

Fluid extract of pyrethrum.....	2 or 3 minims.
Pilocarpine hydrochlorate	1-32 grain.
Pure extract of licorice.....	2 grains.
Powdered acacia.....	2 grains.
Glycerin	1 minim.
Sugar, enough to make.....	20 grains.

One of these may be taken every two, three, or four hours, as may be indicated. This is especially serviceable for singers and speakers just before a concert or lecture.—*Med. World*.

Wash for Post-nasal Catarrh.

Powd. chl. of ammonium.....	1 oz.
Common salt.....	2 oz.

A teaspoonful of this in a tumbler of hot water is to be snuffed up the nose twice a day, particularly in those cases where there is deafness.—*Med. News*.

Saccharin.

SACCHARIN is said to be a powerful antiseptic. A solution of saccharin of a strength of 1 to 500 is an active germicide. A most efficient and at once inexpensive antiseptic mouth wash can be made by preparing a six per cent solution of saccharin in water. A teaspoonful of the drug to a pint of water would about make this proportion.—*Med. World*.

The Drink Question in France.

THE recent Anti-Alcohol Congress in Paris showed that the dram shops of Paris have risen since 1880 from 24,000 to 29,900. In thirty years the consumption of alcohol has been trebled, and as much as 36,000,000 gallons have been manufactured out of potatoes for the French market. This shows an average yearly consumption of over twelve quarts per adult man. The consumption of alcohol doubled between 1875 and 1885. The Congress voted a resolution that inebriates should be treated as mad, and that prison hospitals should be created for them. It was also resolved that the governments of the world should be asked to impose a prohibitive duty on alcohol, and exempt from duty tea, coffee, and other ingredients for temperance drinks.

Whitlows may be aborted in the first stage by moistening the painful part and its vicinity, and rubbing nitrate of silver over it. Gruche found the treatment useful in gout of the great toe.

STANDING on the vantage ground of this year of grace, 1889, and looking forward into the future, I think I can see our profession still advancing. Its ranks are filling up with men more noble. Their brows are broader because they have greater intellect. Their hands are more tender and cunning because they have been taught with greater intelligence. Their achievements are marvelous, because they have studied man's needs with a truer knowledge of the possibilities at hand for his relief. I see the people filled with respect for the dentist, for he has risen to the plane that merits it.—*Dr. D. M. Clapp*.

California Borax.

New borax works have recently been started in Saline Valley, Inyo county. They have eighteen crystallizing tanks, each of a capacity of 1,000 gallons. Three of these tanks are emptied daily, yielding about two tons of borax. The crude material from the borax marsh is first boiled in a boiler of 3,000 gallons capacity, and the solution is then run off into the tanks, where it is allowed to cool off and crystallize for about six days. The borax accumulates on the zinc sides of the tanks, and on plates of that metal hung in them, seven plates being used to each tank. The works are about fifty-five miles from Alvord station, and are close to the great Inyo mountains, which rise like a wall to a height of 11,000 feet above the sea level.

A Bungling Chemist's Discovery.

IN the course of conversation at Cornell University, Edward Atkinson, the Boston economist, stated that a New England genius has recently discovered a cheap method of dissolving zinc by combining it with hydrogen, and producing a solution called zinc water. This liquid, if applied to certain woods, notably white wood, makes it absolutely fire-proof, and at a low cost. Mr. Atkinson regards this discovery as one of the most important of the age, and one that will surely revolutionize fire insurance, as well as immensely decrease the loss by fire. The invention is kept secret for the present. Only one foreigner—Sir Lyon Playfair, the English scientist—knows of it. He corroborates all that is claimed for the invention and says that the inventor is a bungling chemist, but that he has a faculty of blundering into the choicest secrets of nature's laboratory. As soon as patents are perfected and capital interested, zinc water will become an article of commerce.—*Sanitary Volunteer*.

Chapt Hands.—The following is a pleasant and efficacious application for chapt hands:

R. Quince seed.....	½ ounce.
Water.....	q. s.
Glycerine.....	1 fluid ounce.
Alcohol.....	4 fluid ounces.

Macerate the quince seed with a pint of water for twenty-four hours, stirring frequently, strain with gentle pressure through muslin, and make up the volume to one pint with water; then add the glycerine, and finally the alcohol containing the perfume, and stir briskly.—*Pharmaceutical Era*, Nov., 1889.

Ringworm.—Dr. Blanc treated twenty-seven cases of ringworm of the scalp with oleate of copper made into an ointment with vaseline, in the following proportions:

R. Cupri oleat.....	½ drachm.
Vaselini.....	1 ounce.

M. Sig.—Apply to scalp twice a day.

—*Exchange*.

A Reliable Remedy for Ozena or Putridity of the Nose.—A new preparation of aluminum, the aluminium acetico-tartaricum, has been discovered to be almost a specific in ozena. Athenstaedt and Schaefer (*Deutsche Med. Wochens.*, 23, 1885) have tried it in a large number of cases, and say that its effect upon the mucous membrane of the nose and of the larynx is really surprising. Within two weeks a complete cure may be established in all cases where the bone has not already been so diseased as to be loose like a sequestrum. Of a fifty per cent. solution, one teaspoonful is usually added to one-half to one pint of water. In ulceration of the larynx its effect is far more rapid than that of boric acid.—*Lehn and Fink*.

Etching Liquid for Steel is made by mixing one ounce sulphate of copper, one-quarter ounce of alum, and half teaspoonful of salt reduced to powder, with one gill of vinegar and twenty drops of nitric acid. This liquid may be used either for eating deeply into the metal, or for imparting a beautiful frosted appearance to the service, according to the time it is allowed to act.

What is it that Pulls a Person Down?—It is not intellectual work that injures the brain, says the London *Hospital*, but emotional excitement. Most men can stand the severest thought and study of which their brains are capable and be none the worse for it, for neither thought nor study interferes with the recuperative influence of sleep. It is ambition, anxiety and disappointment, the hopes and fears, the loves and hates of our lives that wear out our nervous system and endangers the balance of the brain.